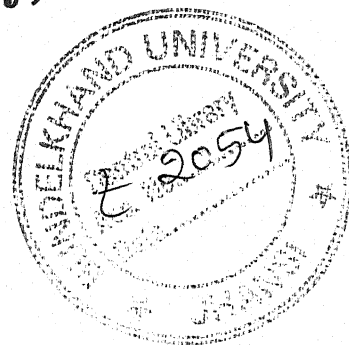


# **INTER-GENDER DRUDGERY IN AGRICULTURAL AND LIVESTOCK OPERATIONS OF KANPUR DISTRICT**

**THESIS**

Submitted to the  
**Faculty of Home Science,  
Bundelkhand University, Jhansi**



For  
the degree of  
**DOCTOR OF PHILOSOPHY**  
in  
**Home Science**  
**(Extension Education)**  
2005

By

**Mrs. Seema Yadav**

**Supervisor:**

**Dr. Neelma Kunwar**  
Officer-in-Charge  
Department of ECM  
College of H.Sc.  
C. S. Azad Univ. of Agric.& Tech.,  
Kanpur

**Co-Supervisor:**

**Dr. Meenakshi Singh**  
Lecturer  
Faculty of H.Sc.  
Bundelkhand University,  
Jhansi

**Dr. Neelma Kunwar**

D.Sc.  
Associate Professor  
/Officer-in-Charge

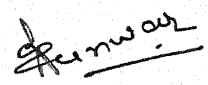


DEPARTMENT OF EXTENSION EDUCATION &  
COMMUNICATION MANAGEMENT,  
COLLEGE OF HOME SCIENCE  
C. S. AZAD UNIVERSITY OF AGRICULTURE & TECHNOLOGY,  
KANPUR-208002  
Tel.: 0512-2555184/ 2551170 (R); 2534156 Ext 165 (O); 0512-2534113 (fax)

## CERTIFICATE

*This is to certify that the Thesis entitled "Inter-Gender Drudgery in Agricultural and Livestock operations of Kanpur District" submitted to the Bundelkhand University, Jhansi for the degree of Doctor of Philosophy is a bonafide research work carried out by Mrs. Seema Yadav under my guidance and supervision. The assistance and help received during the course of investigation and source of literatures have been duly acknowledged.*

*Mrs. Seema Yadav has worked for more than 22 months on the approved subject.*

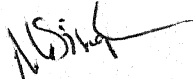
  
(Neelma Kunwar)



## CERTIFICATE

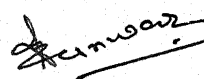
*We the undersigned members are the Chairman and Co-Chairman of Mrs. Seema Yadav, a candidate for the degree of Ph.D. in Home Science (Extension Education) agree that the thesis entitled "Inter-Gender Drudgery in Agricultural and Livestock operations of Kanpur District" may be submitted by her in partial fulfillment of the requirement for the degree.*

Co-Chairman



**(Dr. Meenakshi Singh)**  
Lecturer, HDFS  
Institute of H.Sc.,  
Bundelkhand University,  
Jhansi

Chairman



**(Dr. Neelma Kunwar)**  
Officer-in-Charge  
Department of ECM  
C.S. Azad University of Agriculture and  
Technology, Kanpur- 208002

## ACKNOWLEDGEMENTS

*My debts are great and too many, especially like the debt of God, which I can not even dare to acknowledge, and who bestowed on me the courage to carry out this research work.*

*It is a golden opportunity and proud privilege to work under the talented and inspiring guidance of Dr. Neelma Kunwar (D.Sc.), Associate Professor, Department of Extension Education and Communication Management (ECM), C.S. Azad University of Agriculture and Technology, Kanpur and Chairman of my Advisory Committee. Her untiring supervision, persistent encouragement, unending zeal, conspicuous ability and constructive criticism has always been a constant source of my achievements. I am extremely indebted to her for being meticulous through our investigation and preparation of this manuscript.*

*I also bestow my heartfelt thanks and gratitude to Dr. Meenakshi Singh, Lecturer, faculty of H.Sc., Bundelkhand University, Jhansi; Dr. Arun Srivastava, Research Associate (Statistics), Department of Agricultural Economics and Statistics, and Mr. A.K. Singhal (Agronomy) of C. S. Azad university of Agriculture and Technology, Kanpur for their timely guidance and creative suggestions during the tenure of the present study.*

*From the core of my heart uncountable words of cordial veneration and gratitude are dedicated to my husband Yognendra Singh, my father-in-law Shri B.S. Yadav, my mother-in-law Smt. Raweti Yadav for their love, affection and good wishes, blessings, constant encouragement and inspiration showered by them for the achievements of my present educational assets.*

*I am also thankful to Mr. A.K.S. Sengar, Office Secretary, Registrar Office, CSAVA&T, Kanpur for neat and clean typing of the manuscript.*

*With the blessing of almighty God, I am presenting this work.*

Date: August , 2005

*Seema Yadav*  
(Seema Yadav)

# CONTENTS

Chapter	Particulars	Page Nos.
I	INTRODUCTION	1 – 16
II	REVIEW OF LITERATURE	17 – 37
III	PROFILE OF THE STUDY AREA	38 – 43
IV	RESEARCH METHODOLOGY	44 – 56
V	FINDINGS AND DISCUSSION	57 – 84
VI	SUMMARY AND CONCLUSION	85 – 92
	BIBLIOGRAPHY	93 – 101
	APPENDICES	i – ix

## LIST OF TABLES

Table No.	Particular	Page Nos.
3.1	Population of district/blocks	41
3.2	Distribution of urban and rural population of district/blocks	41
3.3	Development of livestock	42
3.4	Block and village wise distribution of livestock	43
5.1	Distribution of respondents according to age	58
5.2	Distribution of respondents according to education	58
5.3	Distribution of respondents according to type of family	59
5.4	Family size-wise distribution of respondents	59
5.5	Occupation-wise distribution of men and women respondents	60
5.6	Caste-wise distribution of respondents	60
5.7	Social participation of men and women respondents	61
5.8	Distribution of respondents according to type of houses	62
5.9	Distribution of respondents according to material possession	62
5.10	Distribution of households according to possession of milch animals	62
5.11	Distribution of households according to possession of farm power	63
5.12	Landholding wise distribution of households	63
5.13	Farm operations undertaken by men and women in wheat and paddy in terms of man days	65

5.14	Involvement in various operations inter gender variation (wheat)	66
5.15	Involvement in various operations inter gender variation (paddy)	68
5.16	Involvement in various operations – animal husbandry	69
5.17	Involvement in various operations – household activity	71
5.18	Drudgery assigned to the selected farm operations by men and women farm workers	73
5.19	Inter-gender drudgery taken up by men and women in cultivation of one acre of wheat and paddy	75
5.20	Drudgery assigned to animal husbandry operations by men and women	76
5.21	Inter-gender drudgery taken up by men and women in animal husbandry operations	77
5.22	Relationship between socio-personal and economic variables and involvement of men and women in wheat cultivation operations	78
5.23	Relationship between socio-personal and economic variables and involvement of men and women in paddy cultivation operations	79
5.24	Relationship between socio-personal and economic variables and drudgery undertaken by men and women in wheat cultivation operations	79
5.25	Relationship between socio-personal and economic variables and drudgery undertaken by men and women in paddy cultivation operations	80
5.26	Relationship between socio-personal and economic variables and involvement of men and women in animal husbandry operations	81
5.27	Relationship between socio-personal and economic variables and drudgery undertaken by men and women in animal husbandry practices	82
5.28	Decision-making pattern in farm families	84



# Introduction



## Chapter-I

### INTRODUCTION

---

In India, about 80 per cent of the female populations live in rural areas and 86 per cent of the rural women works in agriculture and allied activities (Borah, 1998). Women provide much of the unpaid family labour to agriculture including animal husbandry. Caring animals is considered as an extension of domestic activities in Indian social system and most of the animal husbandry activities like bringing fodder from field, chaffing the fodder, preparing feed for animals, offering water to animals, protection of animals from ticks and lice, cleaning of animals and sheds, preparation of dung cakes, milking, ghee-making and marketing of produce are performed by farm-women. On an average, females spent about 294.34 minutes and 87.17 minutes daily for large and small ruminants keeping respectively. Of the time spent for large ruminants, they spent about 46 per cent of the time for feeding, 21 per cent for milking and 12 per cent for marketing the milk and milk products, while for small ruminants, they spent about 74 per cent in feeding tasks and around 7 per cent for watering, housing and hygienic maintenance. Imputed economic value of the time spent on animal based tasks by farm-women was calculated to be Rs. 7.26 per day per household in large and small ruminants keeping respectively. This measure underlines the economic importance of the functions carried out by farm-women in the rural economy and in livestock farming.

Cattle are the foundation of Indian agriculture. For the large majority of small farmers, cattle is perhaps the only tangible assets and mainstay for their socio-economic security. Dairy farming help directly in increasing crop

production by making available draught power, manure and cash income on day-to-day basis.

### **Role :**

Role of women in agricultural sector, especially as keepers of livestock, greatly improved world food security by enhancing health and livelihood of individual families (Sinn *et al.*, 1999). Women provide much of the unpaid family labour to agriculture (Thakar and Patel, 1998) including animal husbandry. Having been highly employed in livestock rearing activities (Birader, 1986 and Bhogal *et al.*, 1988). Rural women were found to devote 90 per cent of their time on cattle care, making it more or less a female domain (Veena *et al.*, 1986).

There is limited and under-statement of statistical data on women working on household farms (Wijaya, 1993). Hence, a systematic valuation of time spent by females for household activities including animal care needs attention for policy intervention (Guleria and Agnihotri, 1985). The contribution of rural women, though not less than that of men in terms of time and effort, are invisible because they are largely unpaid and home based.

Their contributions are continued to be given lesser importance while formulating livestock/rural, development programmes. Though the association between women and livestock production needs productive exploitation, especially while aiming at rural development through livestock development, lack of empirical evidence on the magnitude of the female participation and the extent and nature of their association in livestock farming operations, however, limit our efforts in exploiting this linkage. This study has been planned to fill this gap, arising out of the dearth of documented evidence on female participation in livestock farming.



### **Time utilization :**

The farm-women spent a considerable amount of time on animal husbandry activities. In the lean season, the housewives and mothers-in-law and daughters-in-law spent the same amount of time (3 hours 20 minutes) while in the cropping seasons housewives, mothers-in-law and daughters-in-law spent almost the same time. But in the peak season, the time devoted by the mothers-in-law became relatively lower than the daughters-in-law, may be because the mothers-in-law devoted more time on agricultural activities. Thus, different family position differed significantly in their participation in 23 out of 35 animal husbandry sub-activities in six gamut's of animal husbandry, viz. breeding, feeding, health care, management, livestock products making and marketing.

### **Attitude, knowledge and skills**

Mehrotra (1989) found that attitude of a majority of rural women (73 %) towards animal husbandry technologies to be favourable : about two per cent rural women did not have a favourable attitude; and the rest showed neutral attitude. Regarding the attitude towards giving balanced ration to animals, 93 per cent of women were in favour of it. Age did not play a differential role in this regard, but the upper and lower caste women were reported to be more favourable than the backward caste. Women from the nuclear family were more in favour of this technology. Daughters in the family were also found to be eager to follow the technology, especially the neoliterates.

Attitude toward artificial insemination was found to be positive among 32 per cent of women, mostly young in age, upper caste women did not show a favourable attitude, but majority of daughters were found to have a favourable disposition towards this technology. Literates and 45 per cent of the large farmers had favourable attitude towards artificial insemination. As far as the

attitude towards scientific housing was concerned, about 90 per cent of women belonging to upper caste and nuclear families were in favour of this technology. Attitude towards crossbreeding was another area studied by Mehrotra (1989). It was revealed that 5 per cent of women were in favour of crossbreeding. All age groups showed almost similar trend. Literacy did not play any significant role. Irrespective of the landholding size, the women showed high degree of favourable attitude for the latest technologies of animal husbandry.

Attitude of farm-women towards the productivity of dairy animals, generation of employment and income from animal husbandry are inter-related phenomenon. Tripathi (1991) studied these three parameters among the members of milk cooperative and non member of the cooperative system in Bareilly district. Her study revealed that about 19 per cent of rural women in member cooperative system had high level of favourable attitude towards productivity, as against only two per cent in non member cooperative system. In another study conducted among the tribal women in Madhya Pradesh, attitude towards productivity, was found to be highly favourable in majority (65.33 %) of tribal women in the roadside villages, whereas all the women in the interior villages had a medium level of favourable attitude towards productivity (Khandekar, 1992). In deep interior villages, almost the same number of women had medium and low levels of attitude scores towards productivity. She further concluded that 80 per cent of tribal women in the roadside, 80 per cent in the interior and about 59 per cent in the deep interior villages had medium level of favourable attitude towards employment generation.

Tripathi (1991) reported that about 16 per cent of the rural women in the member cooperative (MC) and 10 per cent in the non member cooperative (NMC) system were found to have high level of favourable attitude towards

employment in dairy enterprise. As far as attitude towards income generation was concerned, she further reported that 94 per cent in NMC and 100 per cent in MC system had medium level of favourable attitude, which was much higher than reported by Khandekar (1992) among the tribal women of Madhya Pradesh. Khandekar (1992) in her study had further reported that 68 per cent tribal women in the roadside, 71.67 per cent in the interior and 50 per cent in the deep interior village had medium level of favourable attitude towards income generation.

Besides attitude, knowledge of farm-women regarding various segment of animal husbandry and its technologies is also an important component of behaviour and thus, has been studied by various researchers. Jamal (1989) reported that the farm-women were found to have a low level of knowledge in the role segments of feeding, breeding, management, health care, and marketing in dairy animal production, and only medium to high level of knowledge in the role segment of milk products making. She further added that a positive and significant relationship exists between knowledge level of farm-women in the feeding of animals and her performance in this segment. Thus, with better knowledge about technologies development in the areas of feeding of dairy animals, the farm-women can increase their contribution in augmenting productivity of dairy animals.

Tripathi (1991) studied the overall the knowledge level of rural women about various animal husbandry technologies and reported a high level of knowledge in case of 29 per cent members of the dairy cooperative system (MC), as compared to only 11 per cent of rural women in the non member cooperative system (NMC). High level of knowledge about dairy farm technologies, viz. artificial insemination (27 %), vaccination of animal against

contagious diseases (27 %), feeding nutritious green fodder (34 %), and feeding concentrates to dairy animal (31 %) was observed in the rural women of MC system as compared to 10, 3, 7 and 3 per cent respectively in the NMC system. High level of knowledge about green fodder cultivation was, however, found in the NMC system (30 %) than in the MC system (17 %). Thus, in the MC system rural women were found to have significantly higher level of knowledge about all the technologies except the cultivation of nutritious green fodder.

Jamal (1989) studied two animal husbandry practices, which required skill to perform in the two studied practices, viz. clean milk production, and preparation and feeding of home made concentrate mixture. The level of skill possessed by farm-women in clean milk production was found to be positively and significantly associated with her level of performance in the management of dairy animals. Thus, farm-women need to be equipped with practical skills in feeding, management and milk products making, where they are fully involved. Skill oriented practical training programmes, specifically for farm-women, need to be developed and organized in a planned manner.

#### **Decision making :**

The knowledge level of rural women about various animal husbandry technologies and reported a high level of knowledge in case of 29 per cent members of the dairy cooperative system (MC), as compared to only 11 per cent of rural women in non-member cooperative system (NMC). High level of knowledge about dairy farm technologies, viz., artificial insemination (27 %), vaccination of animals against contagious diseases (27 %), feeding nutritious green fodder (34 %), and feeding concentrates to dairy animals (31 %) was observed in the rural women of MC system as compared to 10, 3, 7 and 3 per cent respectively in the NMC system. High level of knowledge about green

fodder cultivation was, however, found in the NMC system (30 %) than in the MC system (17 %). Thus, in the MC system rural women were found to have significantly higher level of knowledge about all the technologies except the cultivation of nutritious green fodder.

Jamal (1989) studied two animal husbandry practices, which required skill to perform. A majority of the farm-women were found to have low levels of skill in the two studied practices, viz., clean milk production, and preparation and feeding of home made concentrate mixture. The level of skill possessed by farm-women in clean milk production was found to be positively and significantly associated with her level of performance in the management of dairy animals. Thus, farm-women need to be equipped with practical skills in feeding, management and milk products making, where they are fully involved. Skill-oriented practical training programmes, especially for farm-women, need to be developed and organized in a planned manner.

Ergonomics is the new discipline in developing countries applied to the assessment of workload in various activities performed by women in home and farm. From physiological point of view, the workload refers to the demands placed on the cardio respiratory system and is determined from the energy cost and cardiac cost of work (Chauhan, 1999).

Most of the agricultural and animal husbandry activities are performed by the farmwomen. Due to the traditional technologies they use, the work efficiency is reduced and they have remained as shadow workers. There is a greater need to bridge the gap between the technology producers and the users. Many technologies have not reached the women at grass root level. The improved technologies, if properly used, can reduce the drudgery of farm-women and increase the work efficiency. The gender bias modifications can be incorporated

if new technologies are introduced. This will bring the farmwomen into the main stream of national development.

### **Livestock productivity, employment and income generation :**

Productivity of dairy animals, generation of employment for the farmwomen and generation of income for the family are very closely interrelated phenomena, more so under rural socio-economic situations. Even in the Eighth Five Year Plan, these are the three priority areas identified by the planning commission. Therefore, maximum emphasis needs to be given by the researchers to work on these three parameters in support of developmental activities and programmes.

Jamal (1989) found socio-economic status to be positively and significantly associated with productivity of milk indicating that higher the socio-economic status, higher is the productivity of dairy animals. Dairy herd size was, however, found to be negatively and significantly associated with the productivity of milk increased with decrease in dairy herd size. Age, position, caste, family education status, family type, land holding, information source utilization, and economic motivation were not found to be associated with productivity of dairy animals. This indicated that the personal characteristics of farm-women did not make a major contribution towards the productivity of dairy animals.

Tripathi (1991) concluded that rural women's orientation towards encountering risk to adopt the dairy farm technologies had maximum direct effect on the productivity of dairy animals. She further reported that the place of employment of rural women was directly influenced by their attitude towards employment. Management orientation was the single variable which had its largest indirect effect on the place, duration of employment, level of

involvement in dairying activities, and overall employment status of rural women in dairy enterprise. Besides this, the productivity of dairy animals had direct effect on the duration, level of involvement and activity wise involvement of the farm-women in dairying.

In a later study, Tripathi and Kunzru (1992a) reported that rural women having higher level of innovation proneness, risk orientation and level of aspiration, favourable attitudes towards productivity and cooperation adopted a large number of dairy farm technologies; achieved higher levels of productivity in their dairy animals, and generated employment for the farm-women in the dairy enterprise. They also reported that the productivity of dairy animals was found to be higher among the members of cooperative system than among the non-member cooperative area. Irrespective of the system, rural women achieved higher productivity in their milch animals when their level of employment in dairy related activities was higher. Irrespective of the system, the level of employment in dairy enterprise of middle aged young women belonging to schedule caste and coming from families having lower education status was found to be higher, both at home and outside the home. They, however, achieved a lower level of productivity in their dairy animals. In milk cooperative system, higher availability of critical inputs led to higher adoption of dairy farm innovations and higher productivity of milk, and generated employment and income.

As development benefits are to be extended to women beneficiaries, their envisaged coverage should be attempted by having more women-oriented units/activities of their interests. To get them actively involved in various developmental programmes, they need to be educated on various aspects related to the programmes, activity and execution. An extension agency with the support

of mass media and appropriate technology can play a vital role in encouraging women beneficiaries to derive more benefits from the extension programmes. Short duration training on improved animal husbandry practices would be more useful in order to cover a large number of women engaged in animal husbandry sector, and also for qualitative improvement of units in this sector. Infrastructural facilities and services need to be created so that women beneficiaries find it adequate and accessible, and in turn, contribute towards augmenting their livestock productivity, employment and income. Simultaneously, research system should develop specific audience-oriented technologies, especially in those segments of animal husbandry in which rural women are substantially contributing towards their adoption by the client system for employment and income generation and to raise their socio-economic status. Appropriate women oriented programmes need to be designed keeping in view the ground realities, resource base of the beneficiaries, their socio-economic background and experience, so as to achieve better results. Their involvement in decision-making, planning and execution of programmes need to be encouraged.

Drudgery is generally conceived as physical and mental strain, fatigue and monotony hardship, experienced by human beings. While all of these results show decline in living and working conditions, affecting men and women alike, the plight of the poor and the weak in this regard is alarming, as they continue to be constrained by illiteracy, malnutrition and unemployment. Modernization of agriculture has proved women with better income earning opportunities in some areas but has displaced them from their traditional roles in others. Such a negative impact on employment could cause much distress particularly to families where the total family income is small and hence needs to be



supplemented by the earning of both husband and wife. All the aspects require a close examination.

Farm-women constitute so significant a part of working women population in our country that it necessitates a fuller understanding of their status and role, not only as they now are but as they may be developed in future.

Most of the agricultural and animal husbandry activities are performed by the farm-women. Due to the traditional technologies they use, the work efficiency is reduced and they have remained as shadow workers. There is a greater need to bridge the gap between the technologies have not reached the women at grass root level. The improved technologies if properly used can reduce the drudgery of farm-women and increase the work efficiency. The gender bias modifications can be incorporated if new technologies are introduced. This will bring the farm-women into the main stream of national development.

#### **Profitable milk business through dairy cooperative :**

Dairy cooperatives have emerged a boon for poor milk producers and also played an important and vital role in the success story of dairy development. In Uttar Pradesh, dairy cooperative development programme has achieved a remarkable success and the state has emerged as the largest producer of milk in the country. Anand Pattern has been adopted in entire Uttar Pradesh. Dairy cooperatives were more successful in the village particularly in remote areas as compared to those nearer to town or city where large number of milk producers resides and their agricultural land is out of the village. They can conveniently pool up their milk to the collecting center within a distance of two kilometers. Dairy cooperatives at village level have been organized with the idea of bringing

millions of milk producers under the umbrella of cooperatives. Milk producers with small-scale production constitute an important component of dairying.

It is said that India lives in villages since a majority (74 %) of the families are dependent on agriculture with livestock constituting an integral part. In India, animal husbandry dairying sector accounts for over 25 per cent of gross value of agricultural output. India's 460 million livestock offer to meet domestic demand for food, employment generation with the earning of more profit especially for marginal, small farmers and agricultural labour. The dairy development organizations in the country are thriving hard to increase the income of dairy farmers. Keeping above points in view, a case study was conducted with the successful cooperative society to understand its functioning and profitability.

### **Dairy development :**

As days go by, dairying in India, in keeping with its pace of mechanization, is also getting more and more sophisticated and organized and in this field cooperative effort is playing a significant role. In some states, notably Gujarat, the entire milk industry has been handed over to the cooperative sector and this is an example which other states are trying to emulate. This is perhaps the only way by which benefits to the producers could be maximized.

Development of dairying has to be a two pronged effort : on the one hand, it has got to be organized making optimum use of the available yield, and, on the other, the quality of livestock has to be improved to increase the yield. It is gratifying to note that managers in the dairying sector, both in the Government and outside, are conscious of this and are indeed putting effort on both the planks.

As a corollary to dairy development and expansion, provision of milch cattle finds a prominent place in the special programmes devised for the weaker sections and the weaker regions. In collaboration with banks and other credit institutions, a large number of milch cattle have been provided to the rural poor under the Small Farmers Development Agency projects and Drought Prone Areas Programme. All the animals supplied are under insurance cover and adequate veterinary care has been arranged for them. Among the beneficiaries are a large number of Harijans.

One aspect, which needs proper investigation is the effect the modernization of dairying and consequent diversion of milk from the rural to the urban consumption centers has on the nutritional status of the villages themselves. While the needs of the big cities have to be met, care must be taken that it is not at the cost of the villagers where people are already suffering from malnutrition. The only way in which the needs of the both can be met is obviously increased production. This precisely is the problem in the ultimate analysis and it is towards this end that all efforts must be directed.

### **Communication strategies :**

Communication strategies in livestock production for the farm-women for all-round development and their active participation at community level remain generally weak, leading to shortfall in fulfillment of our plans and policies. In fact, the significance of communication in mobilizing masses and preparing them for a desirable change is well established. In rural situations, mostly interpersonal communication networks are relatively more important in diffusion and adoption of innovations. The non-institutionalized interpersonal sources of

information were utilized by a majority of the farm-women. For seeking animal husbandry information friends, relatives, and neighbours within the village were the main sources of information (Agarwal, 1987; Bhinder, 1988; Jamal, 1989; Khandekar, 1992; Tripathi, 1989).

Bhinder (1988) revealed that opinion leaders were regarded as the most credible source for both the animal and family planning information. Family education status, farm size, group participation, family norms, and innovativeness were found to be highly associated with the communication behaviour of farm-women, whereas age, family size, herd size, community awareness and fatalism scientism had no significant relationship with the communication behaviour. Caste, religion and level of education were reported to determine the flow of communication and highly influence the information seeking and giving patterns among the farm-women. However, age did not act as a barrier in the free flow of interpersonal communication among them. Further, age and experience of the opinion leaders played a significant role in the flow of communication. The flow of interpersonal communication was found to be horizontal, upward and downward among the farm-women. These findings will help extension personnel working in animal husbandry and home science areas in utilizing these key individuals appropriately in the diffusion and adoption process, and channelizing their developmental efforts through them judiciously and effectively.

There is a need for innovative changes in extension programmes and approaches to reach the rural women. A study on communication credibility, as perceived by farm-women, was undertaken by Joshi (1990) in Bareilly district of Uttar Pradesh. She found that the farm-women who devoted a lot of their time in

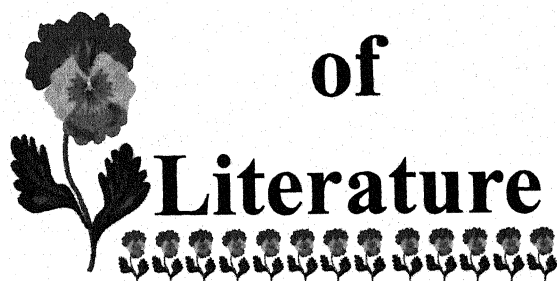
animal husbandry related tasks, were not receiving any information directly from the institutional sources of communication. They depend only on informal sources for obtaining necessary information. Family members were found to be the most credible and trustworthy persons because of frequent interaction with them. For a vast majority of the farm-women, the female urban communicator in the 25-35 years age group was considered suitable. A combination of local dialect and Hindi language was given preference, whereas, the dress of a communicator, was not found to be so important for the farm-women. Thus, the efficiency of communication with the farm-women will undoubtedly accelerate if their perceived preferences for an efficient, effective and acceptable communicator of farm information are given due thought. Interestingly, the farm-women while preferring women communicators did not give any preference for rural background of those similar to their social or cultural characteristics. The educated smart girls (irrespective of their background) were accepted by them as the best communicator, with the hope that they might know better in respect of new technologies. The older farm-women, however, preferred otherwise.

Present study was, therefore, assigned to test the tenability of these assumptions through empirical analysis with the following specific objectives :

1. To study the socio-economic characteristics of rural women of the study area.
2. To study the nature and extent of involvement of rural women and men in agriculture, animal husbandry and household activities in terms of operations and time spent.
3. To estimate the drudgery profile to men and women in agriculture and animal husbandry practices.

4. To isolate the correlates of involvement and drudgery in agricultural and animal husbandry practices.
  5. To suggest the suitable policy measures for improving the status of women involved in agriculture and animal husbandry sector.
-

# Review of



# Literature

## Chapter-II

### REVIEW OF LITERATURE

---

**Jain (1980)** quoted that women in Gujarat are generally associated with animal husbandry activities, which are performed at home viz., cattle feeding, milking, fodder preparation and cleaning of shed. While the men are generally engaged in tasks, which are performed outside the home, viz., procurement/ collection of cattle feed and fodder, pasture grazing and offering water to animals.

**Sharma (1980)** reported that non-availability of high yielding variety of fodder seeds and mineral in the area, lack of knowledge of improved feeding practices, non-availability of compounded feed, high cost of input etc. were main constraints in livestock production.

**Marothia and Sharma (1984)** observed that on an average family female members of Chhattisgarh region spend 60 per cent of their time in subsidiary activities. Women labour input is maximum in fodder collection followed by cleaning of cow shed and preparation of farm yard manure.

**Munjai (1984)** stated that in Karnal district of Haryana state the participation of women was high in different dairy activities such as fodder activities, animal care, and miscellaneous activities.

**Bhati and Singh (1985)** stated that women in Himachal Pradesh spend about two-third of their time for tending cattle. Women's share in total work was 71 per cent on marginal farms and 66 per cent on medium farms.

**Dhongada *et al.* (1985)** conducted a study on participation of women labour in Maharashtra and pointed out that the participation of women in tending of cattle was more or less equal in jowar, cotton and sugarcane regions.



**Sisodia (1985)** evaluated that in Chambal Ragi region for animal based tasks, family female labour is utilized substantially for about 34 per cent cake making, milking of animals and removing of cow dung from the cattle shed and feeding of animals are mostly done by the farm-women.

**Upadhyay (1985)** opined that at many places in Rajasthan, the entire management of livestock, starting from collection, carrying and chaffing of fodder to feeding and milking, preparation of milk products, cleaning of cattleshed, making cow dung cakes and storage activities are done by women.

**Ratnam and Prasad (1985)** estimated that dairying is a good source of income for small and marginal farmers. Because required feed for milk production can be met from his limited land resources as by-products without incurring much additional cost. Dairy development activities brings social and economic change in rural areas. The success of these schemes mainly depends on marketing facilities for the milk products in rural areas, this is done generally through dairy societies.

**Guleria and Agnihotri (1985)** explained that a systematic valuation of time spent by females for household activities including animal care needs attention for policy intervention.

**Gandhi *et al.* (1986)** noted that besides taking care of almost all the household work, women also participate in most of the animal related activities. Collection and storage of manure, feeding cattle, looking after the milch cattle and poultry keeping were entirely the jobs of farm-women in Haryana.

**Sangwan *et al.* (1986)** stressed that about 90 per cent of rural women in Haryana participated in dairy activities and reported that on an average a women devoted about 4 hours per day in slack agricultural season as compared to 3-6 hours per day in peak agricultural season.

**Birader (1986), Veena et al. (1986), Bhogal et al. (1988)**, says that having been highly employed in livestock rearing activities rural women were found to devote 90 per cent of their time on cattle care, making it more or less a female domain.

**Anonymous (1987)** observed that animal care on an average demanded 2 hours 15 minutes which included bringing the fodder and cutting it. This varied according to land holding categories, e.g. landless (3.52 hours), marginal (2.19 hours), small (2.22 hours), medium (1.45 hours) and large (0.56 hours).

**Lepcha (1987)** concluded that average daily hours spent in agricultural and livestock production activities were about 7.2 hours per day in eastern districts of Sikkim state.

**Agarwal (1987), Bhinder (1988), Jamal (1989), Khandekar (1992), Tripathi (1989)** says that communication strategies in livestock production for the farm-women for all round development and their active participation at community level remain generally weak, leading to shortfall in fulfillment of our plans and policies. In fact, the significance of communication in mobilizing masses and preparing them for a desirable change is well established. In rural situations, mostly interpersonal communication networks are relatively more important in diffusion and adoption of innovations. The non institutionalized interpersonal sources of information were utilized by a majority of the neighbours within the village were the main sources of information.

**Anandalakshmy and Sawhney (1988)** reported that women play a prominent role in crop cultivation and post-harvest operations. All women in rural areas irrespective of their age, size of their family, size of land holding, caste and community perform major agricultural task. Women of landless labour

families are the poorest, bearing a heavy burden of work in cultivation and performing even the task of land preparation, along with all other tasks.

**Dubey (1988)** noted that women also engage in grazing the animals on distant lands, collect fodder, wash the cattle, clean the sheds, feed the animals, milk them and take the milk for sale.

**Kar (1988)** studied that women in West Bengal spend 40 to 50 per cent of their working hours daily in feeding and management of livestock and related activities.

**Thakur (1988)** explained that women perform most of the agricultural and animal husbandry work in addition to managing the house also. In various animal husbandry task, their involvement is more, tending cattle in shed (100 %), fodder collection (95 %) and milking (96 %).

**Patel and Mehta (1988)** evaluated that landless women in Karnal district of Haryana work more number of hours in dairying than man and their per hour earning from dairying is 4 times than that of agriculture. Women work for most of the dairy operations, from fodder harvesting to its feeding, milking of cows and buffaloes, processing of milk for curd, butter, lassi and ghee, as traditional practices.

**Sardana *et al.* (1988)** concluded that Indian farm-women are playing dominant role to the extent of 95 per cent in tending dairy cattle, collecting fodder from field, selling livestock production like milk, management of cattle, and making of farm yard manure.

**Thakur (1988)** explained that women perform most of the agricultural and animal husbandry work in addition to managing the house also. In various animal husbandry tasks, their involvement is more in tending cattle in shed (100 %); fodder collection (95 %) and milking (96 %).

**Nagpal (1989)** concluded that most of fatigue jobs in Kulu are performed by women and there are social taboos preventing them from using modern technologies, even if they can do so. Feeding, cleaning the cattle shed and different aspects of animal husbandry are generally done by women.

**Varma (1989)** concluded that animal husbandry is predominantly a male affair in case of high socio economic status because majority of them had employed permanent male about to look after the animals, whereas, it is predominantly a female affair in case of farmers of medium and low socio-economic status in Karnal district of Haryana. On an average, a women devotes 3.5 hours per day for animal husbandry activities against only 1.6 hours per day devoted by men in these activities.

**Nataraju and Lovely (1989)** studied that women participate to a very large and considerable extent in 11 out of 17 family operations. Except ploughing operation, they participate in all other operations to a large extent such as sowing/transplanting (86 %), weeding (84 %), storage of grains (78 %), land preparation (72 %), cleaning seeds for sowing (70 %), gap filling (68 %), manure and fertilizer application (68 %), harvesting (64 %), threshing and winnowing (62 %) and rat control practices (58 %).

**Varma (1989)** revealed in her study that the total amount of drudgery in carrying out agronomic operations of paddy and wheat cultivation shouldered by men. They seems to be indirect proportion of the time spent in performing various tasks by men as well as women. The amount drudgery per man day of work shouldered by women was found to be significantly higher than that shouldered by men in case of wheat cultivation, but it was in the reverse order in case of rice cultivation. She also reported that age has non-significant association with drudgery. Same conclusions were arrived at by Jain (1991). Charu (1992)

reported significant relation of age with involvement and drudgery in agriculture.

**Verma (1989) and Jain (1991)** found negative and non-significant relationship of respondents education with involvement. **Charu (1992)** reported significant relation of education with involvement and drudgery undertaken by the respondent.

**Verma (1989), Jain (1991) and Charu (1992)** showed non-significant relationship of family type with involvement and drudgery of women in agricultural and animal husbandry practices.

**Kharole (1990)** stated that in Haryana, involvement of rural women was maximum in milk processing, preparation of concentrates and distribution of fodder to the animals. On an average, rural women spent 3 hours 26 minutes in dairy farming.

**Shatrugna (1990)** observed that the most over worked women are from the middle peasant households, i.e. households with some land, cattle and other animals and that the women experience drudgery to a great extent as each of their seasonal tasks as winnowing, drying, preserving grains, grinding spices, etc., take chunk of her time in addition to mending clothes and caring sick and elderly family members.

**Manekar (1990)** opined that during peak season of agriculture specially at harvesting time, women of farm families work on an average seven to eight hours a day in the fields. This is besides their routine duties of cooking. Fetching water, cleaning etc.

**Yadav (1990)** discussed that the involvement and time allocation of women labourers in Haryana were found to be maximum in harvesting followed by transplanting, weeding, threshing, winnowing and uprooting operations.

**Jesani (1990)** reported that agricultural task like transplanting, weeding and threshing are done by women but ploughing is done by men only. Showing division of labour within occupations is highly sex-biased.

**Bala (1991)** discussed women devoting maximum time in harvesting, interculture and threshing, i.e. 6-8 hours in Hisar district. She further concluded that they do not devote any time in sowing, irrigation, plant protection and marketing.

**Kalantri et al. (1991)** studied that the activities like spreading dung manure in farms, watering standing crop for protection from rodents, insect and pest had and medium participants at farm-women, whereas in the activities like maintenance of agriculture implements, irrigation and collection of harvested crop women's involvement was quite low.

**Sultana (1991)** opined that 81 per cent women are helping and working in paddy cultivation in the fields in Assam.

**Census Report (1991)** showed that the proportion of women cultivators in the country registered a slight increase (1.64 %) and that of women engaged as farm labour went down by 1.53 per cent at the end of 1991 as compared to 1981 census figures in India.

**Rajamal et al. (1991)** revealed that 92 per cent women were involved in sowing, weeding and winnowing. Between 83 and 89 per cent women carried out transplanting, application of fertilizers, harvesting and threshing.

**Jain (1991)** evaluated that total drudgery and per man day drudgery taken up by women in animal husbandry operations were more than those taken up by men in Hisar district, but it was in reverse order in case of Kurukshetra district of Haryana where men perform more drudgery – prone activities than women in animal husbandry practices.

**Jain (1991) and Charu (1992)** revealed that significant relationship exists between agricultural process and involvement of women in animal husbandry as well as with drudgery in animal husbandry activities.

**Jain (1991)** reported that involvement of women in animal husbandry operations (in terms of average man days) were higher than that of men in both Hisar and Kurukshetra districts of Haryana.

**Rangnekar *et al.* (1991)**, says that many of women's from a village near Baroda were eager to learn about high producing dairy animals. As the discussions proceeded, many expressed their interest in learning about fodder crops, ensiling, urea treatment and grass storage. They were aware of the effect of good quality fodder on milk production, while this awareness and keen observation of animal behaviour are assets, the prevalent illiteracy is a limiting factor.

**Jain (1991)** reported in majority of cases, decisions were taken jointly by husband and wife in Hisar district but in Kurukshetra district, majority of the decisions were taken alone by husbands.

**Sultana (1991)** discussed that 44 per cent of women said that their husbands took decisions for selection of seeds for cultivation. None of the women is taking decisions alone in Assam.

**Charu (1992)** reported non-significant correlation between social participation and involvement pattern and drudgery.

**Charu (1992)** evaluated that farm related decisions were predominantly taken by husbands with meager involvement of women in decision-making in the farm families.

**Tripathi and Kunzru (1992a)** reported that the rural women having higher level of innovation proneness, risk orientation and level of aspiration, favourable attitude towards productivity and cooperation adopted a large number of dairy farm technologies; achieved higher levels of productivity in their dairy animals; and generated employment for the farm-women in the dairy enterprises.

**Jain and Verma (1992)** says that women play a significant and crucial role in agricultural and allied activities including livestock production.

**Charu (1992)** concluded that involvement of women in paddy cultivation operations (in terms of man days) in Haryana was higher than that of men for low, medium and high socio-economic status.

**Bala *et al.* (1993)** studied that women participated actively and dominantly in case of household decisions like the source of fuel and investment, on household goods etc. They further concluded that in more than 90 per cent of the decisions, the participation of women was only of supportive nature.

**Swaminathan (1993)** says that women carryout such jobs as tilling, weeding, transplanting, harvesting, threshing and storing grains, tending animals and providing fuel and water.

**Wijaya (1993)** reported that there is limited and under statement of statistical data on women working on household farms.

**Kaur and Mahajan (1993)** reported that farm-women were performing all the activities related to agriculture from pre-sowing to storage of grain and also activities like dairying.



**Shilaja and Jayaraman (1993)** opined that large, small and marginal farm-women performed majority of post-harvest operations and kitchen gardening.

**Latha (1994)** opined that in 12 out of 15 household, interviewed for study, maximum decision are taken by women in seed selection for production and also that land area for seed production.

**Jha and Shiyani (1995)** studied on differential of adoption and the findings of the study manifest the differential adoption of dairy innovations by tribals and non-tribals. This difference was equally potent in all the dimensions of dairying i.e., breeding, feeding, health care and management. Further, the relational analysis showed that the different socio-economic factor, education status, herd size, average value of herd, average milk production, per capita income and infrastructure facilities influenced adoption of dairy innovation positively and significantly. It is, therefore, suggested that the Infrastructural facilities in relation to animal health should be provided to a greater extent so as to uplift the tribals in the study area through the animal husbandry practices. Moreover, the intensive extension efforts to educate the tribals along with the technical and financial assistance may help in reducing the yawning gap between tribals and non-tribals respondents in the study area.

**Patel *et al.* (1995)** studied that among all the 10 agricultural activities, hand weeding got the highest mean score of 2.66 followed by transplanting, harvesting, threshing, sowing, supervision of fields and nursery raising. Other four activities like storage of grains, manuring, marketing and ploughing got seventh, eighth, ninth and tenth rank.

**Widge (1995)** concluded that women actually perform their agricultural work in addition to long and arduous work in household maintenance, child rearing, cooking, fuel/wood collection, fodder, fetching drinking water.

**Godana (1997)** revealed that women have maximum participation in picking cotton, followed by storing sowing, plant protection and manuring while they have no participation in irrigation preparatory tillage and marketing.

**Khandekar and Kunzru (1997)** revealed that there is high involvement of tribal women in animal husbandry activities but their participation in decisions regarding management of livestock is limited in Madhya Pradesh. They also found that decisions regarding economic activity like cattle, buffalo and goat enterprises were made jointly by a tribal women and her spouse in Madhya Pradesh. They further discussed decisions like family nutrition, are taken alone by tribal women, whereas the outdoor decisions are taken by their husbands alone.

**Jagannath Pati and Kumar (1997)** suggested that in areas of traditional livestock herding, milk production is largely the responsibility of the women.

**Swaminathan (1997)** reported that in Chamoli district of Uttar Pradesh one or more members of each household daily walk five km. steep uphill and spent 6 to 10 hours in searching of fuel and fodder. In 75 per cent of the households, only women have to go out to collect firewood.

**Thakur and Patel (1998)** stated that women provide much of the unpaid family labour to agriculture including animal husbandry.

**Borah (1998)** says that in India, about 80 per cent of the female population live in rural areas and 86 per cent of the rural women work in agriculture and allied activities.

**Sinn *et al.* (1999)** says that role of women in agricultural sector, especially as keepers of livestock, greatly improves world food security by enhancing health and livelihood of individual families.

**Chauhan (1999)** says that ergonomics is the new discipline in developing countries applied to the assessment of workload in various activities performed by women in home and farm. From physical point of view, the workload refers to the demands placed on the cardio respiratory system and is determined from the energy cost and cardiac cost of work.

**Mackenzie (2000)** says that however, a suitable ambitious young persons entering dairy farming today will have broader and higher personal expectations that 20 years ago. If their expectations are not fulfilled in farming, they can seek alternative employment. More of their friends may be in non-farming jobs than would have been the case 20 years ago, hence, their personal expectations will probably reflect this peer pressure. Important for a young entrant to dairy farming may be more social working hours and the avoidance of activities which are considered manually hard, lonely, unhealthy, repetitive and unstimulating.

**Ghosh and Chand (2001)** says that analysis of the constraints of different types disclosed the dominance of economic constraints followed by Infrastructural constraints. The technical and socio-psychological constraints were next in order of importance. Except large farmers, who were well-endowed, small and marginal farmers experienced multiple hindrances which could be easily nullified by a careful effort of development personnel.

**Executive Board, First Regular Sessions Rome (2001-2005)** reported that the time consuming task of fetching water and collecting fuel wood constitute a large part of daily work load, particularly for women, thereby constraining their ability to participate in development opportunities. Isolation

also increase the cost of inputs and transport, which in turn reduces the profitability of marketing farm production. The objective is to decrease physical and economic isolation by improving access to markets, health facilities and safe drinking water, and to reduce the daily workload for women.

**“Country Programme China” Agenda items (2001-2005)** concluded that illiteracy, semi-illiteracy and the lack of skills prevent many poor farmers, particularly women, from diversifying their sources of income and moving beyond subsistence farming, improved access to drinking water, markets, health facilities, fuel wood, fuel-saving stove and improved farming techniques will reduce their work load and free up time for income generating activities.

**Kathy Thompson (2001-2005)** women in Kenya also play key roles in raising animals and in harvesting and processing livestock products for both home consumption and for sale. Although men are often the owners (and sellers) of large livestock, it is the women who perform the most of the household labour devoted to animals. As males seek off farm employment, rural women are assuming greater and more varied roles in managing the family farm, including animal husbandry operations. Women's roles are increasing in virtually every link of the producer to consumer chain within the livestock sector in Kenya. It is, therefore, important to enhance their access to appropriate technologies and information regarding livestock husbandry and processing of animal products.

**Sylvie Morel – Seytou (2001-2005)**, reported that women are key agricultural producer in Kenya, as well as throughout the East Africa region, contributing to 75-80 per cent of all labour in food production and 50 per cent in cash crop production – while receiving only seven per cent of agricultural extension information. In addition to labour contributions, women are increasingly becoming farm managers and heads of farm household, with

estimates that over 40 per cent of all small holder farms are managed by women in Kenya. Women need to be involved in policy making and planning to ensure the most productive and efficient use of land and water resources to meet present and future food and agriculture demands. Women farmers need to be part of the planning and implementation of land and water management programmes, with full access to inputs and organizational arrangements. Equally important is the increased participation of women in training and extension activities that deal with soil resources and land use planning, and in water conservation and development.

**Stephanie Fahey, Shireen Lateef (2002)** reported that economically activities are concentrated in agriculture, whereas, they contribute more hours of labour than do men to cultivation, livestock breeding, agriculture, processing and marketing of agriculture produce. Yet, they have only limited access to extension services since 1993, male farm employment has declined and the number of female farmers has increased. It is clear that as non farm enterprises are becoming more economically attractive, women are being left behind in the less dynamic agriculture sector.

**Alessandro Pio (2002)** reported that wage employment opportunities in rural areas are limited for women. Women work about the same time in income earning activities but earn 14 per cent less than men per month. These differentials decreased during the 1990s , although differences persist in the latter years of the working life cycle.

**Awasthi *et al.* (2002)** concluded that the dairy farmers have a favourable attitude towards improved dairy practices with low to medium level of knowledge about improved dairy practices. It indicates that there is a need to update knowledge of the dairy farmers regarding breeding, feeding, protection

and management. This can be imparted through organizing training programmes on various need based aspects related to dairy farming.

According to **Executive Summary (2002)** Tenth Five Year Plan (2002-07) reported that as the ownership of livestock is more evenly distributed with landless labourers and marginal farmers, the progress in animal husbandry sector will result in a more balanced development of the rural economy, particularly in the reduction of poverty ratio. Even small and medium farmers who derive yearly savings from agriculture are dependent on livestock, especially dairying and poultry for daily subsistence.

According to **BAIF Development Research foundation (Jan. 2003)** unlike other agricultural enterprises, dairy husbandry provides income regularly and throughout the year. Dairy farmers receive payment for milk at an interval of 2-4 weeks.

Empowerment of women has been another major achievement. Dairy husbandry has been providing a good opportunity for women to earn substantial income.

**Reddy et al. (2003)** concluded that the problems in dairy are felt more intensively by small dairy farmers as compared to those who own more than 5 animals. The landless were comparatively better off in terms of management aspects of dairy vis-à-vis small and marginal farmers. However, poor dairy farmers including women were concerned with delayed and irregular payment for their milk by the middleman who also paid comparatively low prices to them. It appears there is need to organize dairy cooperative specially for procurement of concentrate, veterinary facilities and marketing of milk in Prakasam district of Karnataka. Establishment of AI centers of relatively less distance and the

intervention of cooperative societies in extending credit facilities to the women dairy farmers would further help in dairy development in the area.

**Nhantumbo, I., Norfolk, S. and Pereira, J. (2003)**, studied that it is also common for people, particularly children and women, to lack clothing – clearly demonstrating shortage of cash, since cheap clothes donated to the country are being sold in the administration post town at relatively accessible prices. Low agricultural productivity and production contribute immensely to situation. Income from commercialization of the agricultural produce would have greater potential to provide security and access to manufactured goods.

**“Sustainable Livelihood in Southern Africa Research paper 10, Institute of Development Studies, Brighton” (2003)**, both men and women (including children) are involved in agricultural production, despite the fact that the degrees of involvement vary. Generally, only family labour is used in agriculture. However, during the peak seasons (November to January) it can be hired. The payment for this labour is made in kind, with a quantity of goods (such as maize).

**Intelecon (2003)**, rural demand and user preference research is deliberately designed to encompass both women and men, and their involvement will be actively encouraged. This will be ensured at the sampling stage in the survey, where equal numbers of men and women will be selected for participation.

**Kunwar (2004)** says that knowledge level of the respondents have no association with their educational status regarding farm and animal husbandry technologies whereas significant association was found in case of household technologies. Highest adoption of feeding technology among the animal husbandry technologies was observed in the study. She concluded that role of



women respondents in animal husbandry operations have been affected by household income. Except preparation of milk products in other operations indirect relationship was observed. She also concluded that respondents were employed for 115.40 per annum per head in crop production and 70.98 days in animal husbandry tasks. Employment of respondents in crop production and animal husbandry task was indirectly related with their educational status and household income. Respondents have assigned the most drudgery involving technology to transplanting of paddy crops in crop production and carrying fodder from field in animal husbandry.

**Badiger (2004)** concluded that most of the agricultural and animal husbandry activities are performed by the farm-women. Due to the traditional technologies they use, the work efficiency is reduced and they have remained as shadow workers. There is a greater need to bridge the gap between the technology producers and the users. Many technologies have not reached the women at grass root level. The improved technologies if properly used can reduce the drudgery of farm-women and increase the work efficiency. The gender bias modification can be incorporated if new technologies are introduced. This will bring the farm-women into the main stream of national development.

**Singh (2004)** concluded that the empirical findings of the study indicated that majority of the members were medium adoptions. However, still there was medium and low adoption of improved dairy management practices, like feeding practices, breeding practices, disease control and general management. This may be because of ignorance and lack of knowledge. Therefore, it may be suggested that there is need to organic frequent training programme in areas of breeding practices, disease control, feeding practices and general management aspect respectively. So as to make people aware about the improved dairy management practices.



Proceedings : **Sparknet Scenario E. Conference (2004)**, studied the fuel wood is often burnt in poorly ventilated kitchens posing serious health problems for women and children. Also women and children spend long hours per day in the drudgery of collecting fuel wood often from considerable distances. Because of these demands of their time and physical energy, women and children often have no opportunities for education and other productive activities, while their health suffers. In the next 10 years, biomass will continue to represent the largest share of household energy demand in Mozambique.

**Article 1-3 : Definition of Discrimination and Policy measures – 3**  
(Feb., 2004)

**Article 5 : Measures on Gender Stereotyped roles (2004)**, reported that traditionally women are considered as supplementary rather than vital members of the family. Men's control over women is reinforced by religious and traditional barrier strongly enshrined in customary laws and taboos. There are certain myths and proverbs that play a major psychological role in directing and shaping the current stereotyped roles of women in society.

**Article 11 : Employment (2004)**, ninety per cent of urban women, who work, work for cash. On the other hand, rural women generally do not get paid in cash for their work and are likely to work for themselves and for relatives (around 40 %). Information on the current occupation of employed women shows that majority of working women (55 %) have agricultural occupation, 44 per cent work on their own land, 6 per cent work for others, and 5 per cent work on family land. Women who are not working in agriculture range from 9 per cent in sales/services to 13 per cent working as household and domestic workers. One in ten employed women have a professional, technical, or managerial occupation.

**Wage differentials (2004)**, wages vary according to industry, occupation, size of enterprise and other characteristics. In the colonial era, there was a marked distinction of wages between the male and female workers. For the same type of job men's salary was posted much higher than that of the female employees. In independent criteria however, wages are allocated for posts and positions on merit and qualification basis not on gender differentials. Although it is clearly defined by the labour law (under Article 41) that an employer shall pay equal starting wages for the same type of work, in practical terms however, and in reference to private enterprises male workers are found to be paid more than female workers. It is also that they enjoy the benefits of salary increment and promotion more than the female workers do.

**Article 14, "Rural Women in Agriculture" (2004)**, reported that the gender division of labour differs depending on the existing agrarian system as well as socio-economic and cultural factors. In areas where farming is the main stay (highland and lowland areas) both men and women work in the field and share agricultural work. In addition to this, women are involved in back-yard gardening, poultry, bee rearing, weaving and crafting, women in the rural areas work from 14-16 hours a day.

**"Appropriate Technology for Rural Women" (2004)**, reported that the traditional system of dealing with daily life is still holding among the rural women in the villages. Threshing to separate grain from the husks and straw grinding grains by stove cooking with cow dung and woods (causing eyesight and respiratory tract problems) are to mention but a few. The criterion macro policy states remarkably the appropriate labour saving technologies will be introduced to reduce the drudgery of women in the household and others activities (water, fuel, wood, child-care centers etc.) to this effect some projects

such as flourmills, hand pumps, motorized pumps, energy saving stove and solar facilities are being installed.

**Dr. Chumpak P. Pokharel (2005)**, noted that in recent times, due to the current state in security and gradual erosion of informal protection mechanisms in rural Nepal, the vulnerability of such informal rural agricultural workers, both self-employed and wage-employed, has obviously worsened women in agriculture are much more vulnerable than their male counterparts for several reasons and in turn face multiple risk factors. Data indicate that more than 90 per cent of the economically active women are engaged in agriculture even though women's contribution to agriculture is significant both in terms of their working hours and decision-making they do not usually own the land they work for due to non existent inheritance rights.

**Kumari Suman (2005)**, women's role in agriculture is vital as they mostly work long hours and carry the double burden of work in the family and farm. However, women's efforts are mostly taken for granted such that their contribution to income and economic well being of the family is hardly recognized.

**Sanong Chinnanon (2005)**, in the research at the village write witnessed men now actively helping their wives or reel silk threads or even doing housework. One of the reasons of their support is that this weaving activity can make money to help support the family. In several in depth interviews, some men make money in the village said they don't care if it is women's job or not anyone. 'They think it is natural to help women when they have time and can do it. Some women said their husbands don't help weaving, but they used their carpentry skills to make weaving tools and implements. Out of wood for their wives.

**Emerging Gender Strategies for alternative development (2005)**, reported that rural women and men did have different problems, constraints and needs in agricultural production, post harvest processing and household production. Rural women work is producing, processing and household activities were taken for granted, up aid and not recognized/appreciated.

**Rathberger, E.M. and Adera, E.O. (Eds.) (2005)** explained that Uganda is a patriarchal society where men are still the dominant decision – makers, although women carry most of the reproductive, productive and community management responsibilities. The contribution that women can make to society and to the economy is affected by a number of factors, including the level of education, the rural and urban base and access to information, capital and decision-makers. Even though the constitution of guarantees equality between men and women, in many ways women's roles in Uganda are still subordinate to those of men. Women are less educated and have unequal access to development resources, including land, capital and information.

---



## Chapter-III

# **PROFILE OF THE STUDY AREA**

---

Prior to discuss the findings of the study on "Role and status of women in Agricultural Development in Kanpur District", it is essential to sketch briefly the salient features of the study area. The following is the brief features of district Kanpur.

### **District Kanpur**

Kanpur is said to be the corruption of Kanhaiyapur or Kanhpur, which was an unimportant village till its first contact with the British. According to a local tradition, the name of Kanhpur Kohna owes its origin to Raja Hindu Singh of Sachendi, who came here in about 1750, to bathe in the holy river, the Ganga and established a village, which he (possibly) named Kanhpur, the name becoming changed to Kanpur in the course of time.

### **Location**

The district Kanpur occupy the north-western part of the Allahabad division and belongs to the tract known as the lower doab (which comprises the eastern extremity of the strip of country lying between the Ganga and the Yamuna rivers). In shape, it is an irregular quadrilateral and lies between the parallel of  $25^{\circ}26'$  and  $26^{\circ}58'$  north latitude and  $79^{\circ}31'$  and  $80^{\circ}34'$  east longitude. To the north-east, beyond the Ganga, the deep stream of which forms the boundary of the district, lie the districts of Hardoi and Unnao, while to the south, across the Yamuna, are the districts of Hamirpur and Jalaun. On the south-east, the boundary marches with that of Bindki (a tahsil of Fatehpur) and to the west

and north-west are the Auraiya and Bidhuna tahsils of district Auraiya) and that of Kannauj district.

### **Area**

According to the Central Statistical Organization, the district had an area of 3015 sq.km. (Census, 1991).

### **Population**

According to the census of 1991, the district had a population of 32,53,572 in which males are 17,76,197 and females are 14,77,375 and occupied the 2<sup>nd</sup> position in the state in respect of population. The rural areas were inhabited by 11,68,866 persons, 5,36,259 being females and 6,32,607 being males and the urban areas by 20,84,706 persons in which 9,41,116 being females and 11,43,590 being males.

### **Sub-divisions Tahsils**

The district has divided into three tahsils, Kanpur Sadar, Bilhaur and Ghatampur and further divided into ten blocks – Kalyanpur, Vidhnu, Sarsaul, Bilhaur, Shivrajpur, Chaubeypur, Kakvan, Ghatampur, Patara and Vaikunthpur.

Tahsil Kanpur Sadar is the northern most tahsil of the district. Kanpur Sadar tahsil comprises with three blocks – Kalyanpur, Vidhnu and Sarsaul. According to the census 1991, it had 158 villages and covered an area of 792.2 sq.km. with a population of 3,81,154 (females 1,73,775).

The Bilhaur Tehsil lies in west Tehsil comprises of four blocks – Bilhaur, Shivrajpur, Chaubeypur, Kakvan. According to the census 1991, it has 203 villages and covered an area of 867.1 sq.km. with a population of 3,66,092 (females 1,68,051).

The Ghatampur tahsil lies in south. Tahsil comprises of three blocks – Patara, Bheetargaon, Ghatampur. According to the census 1991, it had 196 villages and covered an area of 1083.7 sq.km. with a population of 4,21,620 (females 1,94,433).

### **River system and water resources**

The two chief rivers of the district are the Ganga and the Yamuna. The Isan and the Non are the tributaries of the Ganga and the Rind and Sengar are the chief tributaries of the Yamuna. The river next in importance is the Pandu. The main water resources are rivers – Ganga, Yamuna and lakes.

### **Climate**

The climate of the district is characterized by a hot summer and general dryness except in the south-west monsoon season. The year may be divided into four seasons. The period from March to about the middle of June is the summer season, which is followed by the south-west monsoon season which lasts till about the end of September, October and the first half of November forms the post-monsoon or transition period. The cold season spreads from about the middle of November to February.

### **Rainfall**

Records of rainfall in the district are available for 8 stations for periods ranging from 51 to 97 years. The average annual rainfall in the district is 778.9 mm (30.67") The rainfall in the district varies from 642.3 mm (25.29") at Narwal to 884.8 mm (34.83") at Kanpur. About 89 per cent of the annual rainfall is received during the monsoon months (June to September) August being the rainiest month.



## Temperature

About the beginning of March there is a rapid raise in temperature. May and early part of the June constitute the hottest part of the year. The mean daily maximum temperature in may is 41.3°C (106.3°F) or above. Hot, dry and dust laden westerly winds are common in the hot season.

## People and Population

According to the census of 1991, the number of persons enumerated in the district was 32,53,572 of which the males numbered 17,76,197 and the females 14,77,375.

The following table gives an account of the area and population in 1991 in Kanpur district and Kanpur tahsil.

**Table 3.1** Population of district/blocks

District/block	Area in sq.km.	No. of males	No. of females	Total
Kanpur district	3,005.3	17,76,197	14,77,375	32,53,572
Akbarpur	293.2	65,239	54,855	1,20,094
Sarsaul	305.7	74,899	63,558	1,38,457

## Distribution between urban and rural area

According to Census 1991, the distribution of urban and rural population in Kanpur district and in study area Akbarpur and Sarsaul blocks are as follows:

**Table 3.2.** Distribution of urban and rural population of district/blocks

District/Block	Area (sq.km.)		Population		Urban		Rural	
	Rural	Urban	Urban	Rural	Male	Female	Male	Female
Kanpur district	2685.6	319.7	20,84,706	11,68,866	11,43,590	9,41,116	6,32,607	5,36,259
Akbarpur block	293.2	-	-	1,20,094	-	-	65,239	54,855
Sarsaul block	305.7	-	-	1,38,457	-	-	74,899	63,558

## Animal husbandry

Agriculture and animal husbandry being two inseparable units of agricultural development, the development of animal husbandry has been given due place in the various five-year plans. The animal husbandry department looks after the veterinary and animal husbandry work in the district and is concerned with development of cattle, poultry breeding sheep breeding and allied schemes and the prevention and treatment of various animal diseases.

### Development of livestock

In the district (as else where), cattle provide the required native power for various agricultural operations, including ploughing, harrowing, sowing, irrigation, etc. as well as farm yard manure and milk. Bullocks play an important role as draught power for pulling carts which are still the chief means of rural transport in the district. Due to the need for the extension of land for cultivation, waste land and pastures are gradually decreasing. Grazing facilities are provided by the government and Gram Panchayats. Grazing is also allowed in private grower and harvested or fallow fields and also near the railway lines. The fodder crops sown in the district are M.P. chari, lobia, oats and barseem.

The following statement gives the number of animals treated and vaccinated against various diseases during third and fourth five-year plan period and in 2003-04.

**Table 3.3.** Development of livestock


Period	Number of animals treated	Number of animals vaccinated
3 <sup>rd</sup> Five Year Plan	46,830	58,376
4 <sup>th</sup> Five Year Plan	29,010	56,329
2003-04	5,53,536	4,91,083

The cattle of the district are small and inferior in strength to those of the western districts. Animals of better quality are few and far between. The statement given below indicates the population of livestock in the district in 2003-04.


### Distribution of Animal Husbandry block wise and village wise

**Table 3.4.** Block and village wise distribution of livestock

S. No.	Name of the livestock	Name of the blocks	Name of villages				
		Sarsaul block	Toins	Naugavan gautam	Palikhurid	Badagon	Lalapurvaa
1.	Bull and Bullocks	23,669	16	20	12	17	11
2.	Cow		168	110	98	119	85
3.	He buffaloes		3	4	5	11	9
4.	She buffaloes	55,731	327	342	195	257	251
5.	Goats	41,485	186	230	250	299	219
	Total	1,58,324	978	1,020	1,028	1,680	1,071
		Akbarpur Block	Laharapurva	Kosuvaa	Pur	Muridpur	Sariyaa
1.	Bull and Bullocks	33,550	12	24	22	38	25
2.	Cow		104	65	107	121	131
3.	He buffaloes		13	5	6	12	9
4.	She buffaloes	48367	287	235	320	225	375
5.	Goats	33,435	233	178	317	415	348
	Total	1,22,570	1,128	946	1,393	1,584	1,518



# Research Methodology



## **Chapter-IV**

### **RESEARCH METHODOLOGY**

---

This chapter deals with the research procedures applied in conducting the present study. For convenience, the research methodology has been discussed under the following three sub-heads.

- (i) Locale of the study
- (ii) Sampling procedure
- (iii) Selection of variables
- (iv) Operationalisation of variables and their empirical measurement
- (v) Construction of interview schedule
- (vi) Data collection
- (vii) Statistical analysis

#### **(i) Locale of the study**

Uttar Pradesh was chosen as locale of the study. This was done with the intension that U.P. is a major state of the country and rural women have an important role to play in the development of the state as well as the country. Besides, number of schemes being implemented in the state was another reason to carryout this study in Uttar Pradesh.

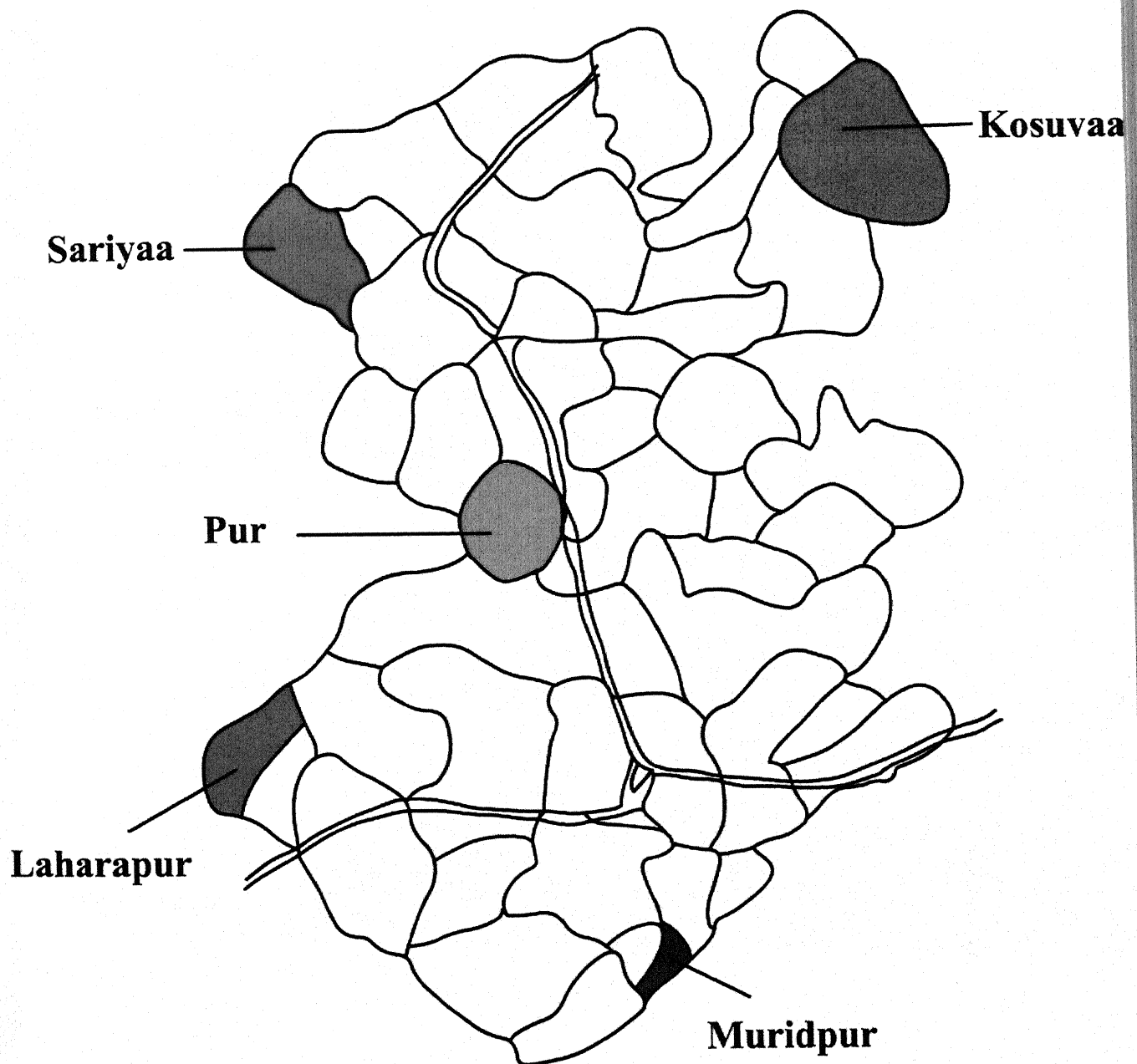
#### **(ii) District under study**

District Kanpur was deliberately selected for this study as the researcher hailed from this place. This helped the investigator to collect the necessary information accurately and timely. The researcher, being from the same place could easily have dialogues and discussions with the respondents both during pilot study and final data collection.

# District-Kanpur



# Akbarpur-Block





### (iii) Selection of blocks

District Kanpur comprises of ten blocks, out of which two blocks namely, Akbarpur and Sarsaul were randomly selected for the purpose of drawing samples. These two blocks provided sufficient number of villages from where indicated size of sample could be drawn.

### (iv) Villages identified for the study

In order to identify sufficient number of villages for drawing an appropriate size of samples, a list of total villages falling in the block was prepared separately for each of the two blocks. From each of the two blocks five villages situated at a distance were selected with the help of systematic random sampling method. Thus, a total of ten villages (five from each block) were selected for the purpose of drawing the sample of respondents. Block-wise list of all the ten selected villages is given below.

<b>Block Akbarpur</b>	<b>Block Sarsaul</b>
1. Kosuvaa	1. Lalapurva
2. Sariyaa	2. Palikhurid
3. Pur	3. Toins
4. Laharapur	4. Badagon
5. Muridpur	5. Naugavan Gautam

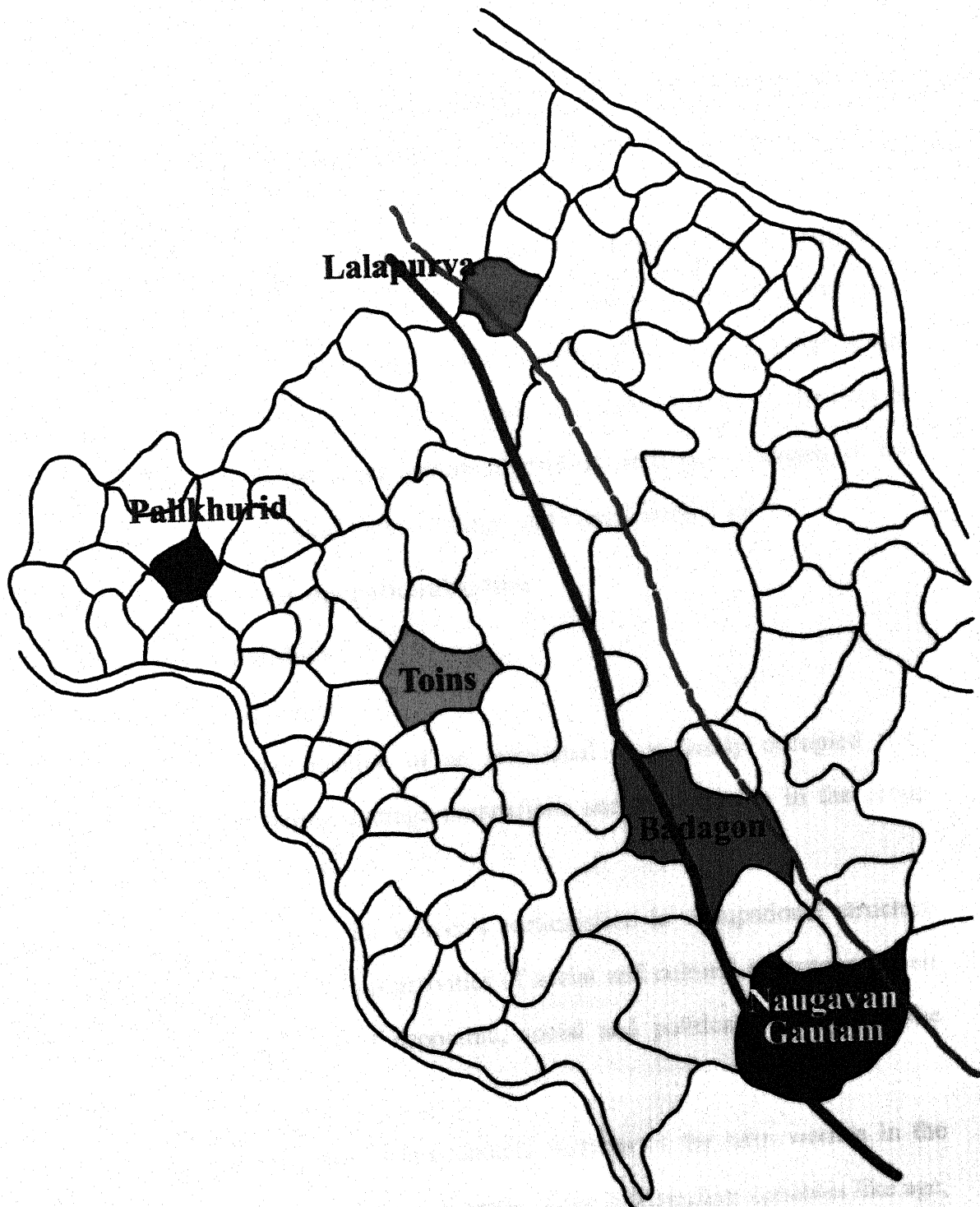
### (v) Sample of respondents

After having prepared a list of respondents family separately for all the ten villages a group of 10 couples was identified from each of the one village. The list of couples was prepared with the help of Village Development Officer, Village Pradhan and Lekhpal.

The couples were categorized as landless labour families, marginal farmer's families, small farmers families and large farmers families. This was



# Sarsaul-Block



done separately for all the samples. This was followed by drawing a set of 10 couples comprised of all four categories viz., landless labourers, marginal, small and large farm labourers from each village.

As mentioned in the above plan, a total sample of 100 couples was drawn for interviewing them personally.

#### **(vii) Pre-testing of instruments**

Before collecting the necessary data from the finally selected sample of 100 couples, a group of 10 couples (each of landless labourers, marginal labourers, marginal and small) was identified other than those included in the final sample of respondents. These 10 couples were interviewed with the help of schedule. This helped the investigation in making necessary changes in the instruments to be finally used their wordings and compositions, etc.

### **B. Variables and their operationalization**

#### **1. Independent variables**

##### **(i) Socio-economic features**

It describes the position of an individual or a family occupied with reference to the prevailing average possessions and participation in the group activities of the community.

This is concerned with women's participation in occupational structure e.g. religious structure, various activities of social and cultural importance, their entrance in various fields of economic, social and political activities of the nation.

In view of this, the socio-economic features of the farm women in the present study was operationalized in terms of the independent variables like age, education, type of family, size of land holdings, caste, occupation, economic status, material possessions etc. A schedule was developed to measure these

sub-concepts in order to arrive at the actual social and economic status of the farm-women.

**(a) Age :**

Age is defined as the chronological age of respondents in form of number of completed years. It was measured as per scoring system followed in socio-economic status scale of Trivedi (1963) with certain modification.

<b>Age-group</b>	<b>Score assigned</b>
(a) Young - up to 25 years	3
(b) Middle - 25 to 35 years	.2
(c) Adult - 36 years and above	1

**(b) Education**

Education refers to the schooling education one has achieved. Educational status of the respondents was measured as per scoring system followed in socio-economic status scale of Trivedi (1963) with certain modifications.

<b>Level of education</b>	<b>Score assigned</b>
Illiterate	1
Primary	2
Middle level	3
High School	4
Graduate and above	5

**(c) Family structure**

Family composition was scored on the basis of

<b>(a) According to family type</b>	<b>Score assigned</b>
Nuclear	1
Joint	2
<b>(b) According of family members</b>	<b>Score assigned</b>
Up to 5 members	1
Above 5 members	2

**(d) Caste**

Caste of the respondents in this study was measured on the basis of response of individual women to which she belongs, i.e. in terms of upper caste, O.B.C. and Scheduled caste. The scores were assigned as under.

Category of caste	Score assigned
Upper	3
O.B.C.	2
S.C.	1

**(e) Occupation**

This was measured on the basis of the scores allotted to different family occupation in the socio-economic status scale developed by Trivedi (1963).

Occupation	Score assigned
Non-agril. labour	0
Agricultural labourers	1
Caste occupation	2
Farming/cultivator	3
Business	4
Service	5

**(f) House type**

The houses of respondents were categorised and scores were assigned as

Type of house	Score assigned
No house	0
Hut without wall	1
Kachcha thatched	2
Kachcha tiled	3
Pucca thatched	4
Pucca tiled	5
Pucca with concrete roof	6
Mansion	7

### (g) Size of holding

Farm size refers to the land unit owned by a farmer under cultivation. Rented areas has also been included under this concept. Farm size, in the present study, was measured in terms of hectares of cultivated land a farmer possessed. Farm size scores for every individual respondents was obtained as detailed below :

Size of holding	Categories	Score assigned
0 ha	Landless	0
0 – 1.0 ha	Marginal	1
1.0 – 2.0 ha	Small	2
2.0 ha and above	Large	3

### (h) Social participation

It refers to the degree of involvement of a respondent in formal organization either as a member or office bearer or even otherwise. The available information was quantified as specified below :

Social participation	Score assigned
Member of one organization	1
Member of more than one organization	2
No membership	0

### (i) Farm power and implements

It refers to the power and implements, which are mostly used for agriculture activities. The score assigned to every items is given below :

Farm power and implements	Score assigned
Tractor	5
Trolley	4
Tubewell	3
Diesel engine	2
Pumpset	1
Country plough	1
Puddler	2

Mound board plough	3
Cultivator	4
Harrow	5
Duster	6
Disc harrow	7
Winnower	8
Thresher	9
Sprayer	10
Seed drill	11

### (j) Milch animals

It refers to the total number of animal heads including dairy possessed by the respondents. The weightage assigned was as follows :

1 – 2 milch animals	1
3 – 4 milch animals	2
5 – 8 milch animals	3
9 and above milch animals	4

## II. Dependent variables

### (a) Involvement of men and women in selected crop cultivation operations

It refers to the actual involvement of men and women of different land holding categories, in terms of actual time spent on different agricultural operations, in selected crops. It was measured with the help of pre-tested, structured interview schedule, developed for the purpose (Varma, 1989).

### (b) Involvement of men and women in animal husbandry operations

It refers to the actual involvement of men and women of different land holding categories, in terms of actual time spent on animal husbandry operations. It was measured with the help of pre-tested structured interview schedule developed for this purpose (Varma, 1989).

### **(c) Involvement of men and women in household activities**

It refers to the actual time spent by men and women in different household activities. It was measured with the help of pre-tested, structured interview schedule, developed for this purpose (Varma, 1989).

### **(d) Drudgery index**

In this study drudgery is operationally defined as physical strains and hardships, experienced by human beings. For preparing, drudgery index of farm operations and animal husbandry operations under study, a semi-projective type instrument in pictorial form was developed. The advantage of pictorial form of semi-projective instrument is that it provides a strong stimulus to project one's perception of the drudgery, involved in the operation, depicted in the picture. It also helps the respondents to make instantaneous and inhibition-free response giving vent to his inner reactions.

The instrument consisted of ten pictures, each for agricultural and animal husbandry operations, depicting ten important farm operations in agriculture and animal husbandry. Each one of them serve as a stimulus, to give expression to the subjective experiences of the respondents with the depicted operations, as far as drudgery is concerned.

The selection of 10 operations each for agriculture and animal husbandry was made in consultation with agronomists and animal husbandry scientists of C.S. Azad University of Agriculture and Technology, Kanpur and also with a few farmers of the area of investigation. The rationale behind the selection was to include all the major operations of cultivation of major crop of the area like rice and wheat and also major animal husbandry operations. The ten operations each account for more than 95 per cent of the total practices involved in cultivation of crops and animal husbandry operations.



In order to arrive at quantitative measures of the drudgery perceived by the respondents in the selected ten operations each for agriculture and animal husbandry practices, Thurstone's law of comparative judgement was taken resort to. It was postulated that the ten practices depicted in ten pictures, each possessed varying but unknown degree of drudgery. The ten practices each were then ordered on psychological continuum, separately with respect to the degree of drudgery, each one of them involved. For this all possible pairs of the ten pictures each, were made which came to 45 in number,  $n = n(n-1)/2$  for agriculture and animal husbandry operations. All the pairs were then presented to each one of the respondents, separately, to make judgement about the degree of drudgery involved in the practices, depicted in the pairs of pictures in comparative terms, i.e. high-low. Each respondent, therefore, made 45 judgements of the two pictures (depicted in a pair of pictures), which involved higher degree of physical drudgery. Following the schematic treatment of paired comparison data as suggested by Edward (1969), the 'F', 'P' and 'Z' matrices were prepared, which yielded scores indicating relative degree of drudgery involved in the practices selected for the study. It may be recalled that there were 30 farm men and 30 farm-women respondents who made the comparative judgement of the drudgery, involved in the selected practices. The data obtained from these two groups of respondents were analysed separately, to yield two continuum, depicting their judgements of the degree of drudgery involved in the practices, for both agricultural and animal husbandry. Internal consistency check as suggested by Edwards (1969), was applied to the data obtained from the two sets of respondents, for both agriculture and animal husbandry operations. This check was evolved to determine whether observed or empirical proportions ( $P_{ij}$ ) agree with those to be expected in terms of derived scale value ( $P'_{ij}$ ). The absolute average discrepancy was found to be 0.092 for the male and 0.076 for



female respondents, for agriculture operations, and 0.112 for male and 0.067 for female respondents, for animal husbandry operations. For a set of ten stimuli, the four absolute average discrepancies appeared to be on higher side. It was, therefore decided to apply test of significance to the data, as suggested by Edwards (1969). For this, the chi-square test of significance developed by Mosteller (1951 b) for discrepancies between observed and expected proportions, obtained for case V method of paired comparison, was applied to the four sets of data. This test determine whether the assumptions involved in case V model were tenable for a given set of data. The underlying assumptions, in case V model, are normality of distribution of discriminial processes, unidimensionality of the psychological continuum and equality of various values of standard deviation of difference as given by formula :

$$\sigma_{i-j} = \sqrt{(\sigma_i^2 + \sigma_j^2 - 2 r_{ij} \sigma_{ij})}$$

Edwards (1969)

Theoretically, if the test of significance results in rejection of null hypothesis, it might be because of any one or any combinations of these assumptions. But in practice, this test is primarily sensitive to lack of unidimensionality. The chi-square values so worked out, came out to be 84.17 for male and 51.90 for female respondents, for agriculture operations. On the contrary, it is 122.6 for males and 48.51 for females, in case of animal husbandry operations.

The reference to Fisher's and Yates Table for chi-square value suggested that the calculated chi-square values are significant at 0.01 level of probability. Thus, the assumptions involved in calculating the scale values under case V model are not tenable. It was, therefore, decided to re-scale the values using case III model as suggested by Edward (1969).

Before applying case III model to work out drudgery index, the stimuli were checked for circular trials. The Zeta values calculated for this purpose came out to be 1.00 which indicated non-existence of circular triads in the responses obtained.

### **Decision-making pattern**

It refers to the extent of participation by farm men and women in making decisions in all the important matters related to cultivation of crop, animal husbandry and household activities. It was measured through a schedule developed for this purpose.

#### **(e) Construction of interview schedule**

The schedule for the present investigation was thus developed in accordance with the methodological procedures described above, keeping in view the objectives of the investigation.

#### **(f) Data collection**

The data were collected in two stages. In the first stages involvement pattern of men and women in agriculture, animal husbandry and household activities, were personally interviewed with the help of structured interview schedule. The schedule was pre-tested in a U.P. village other than the selected village. The text of schedules are given in Appendices I and II. In the second stage, data regarding drudgery were collected through a semi-projective type instrument in pictorial form. The data collection work was done from November to April 2004. With many respondents the researcher had more than one sitting.

#### **(g) Statistical analysis**

The statistical techniques for data analysis used in the study are as follows:

1. 't' test
2. Correlation
3. Rank correlation

### 't' test

It was applied to test the difference between two sample means and when the observations in two sets are independent. Following formula is used :

$$t = \frac{\bar{x} - \bar{y}}{\sqrt{s \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

where  $s$  = Combined standard deviation from both sets of data.

$n_1$  = number of observation in first set of data

$n_2$  = number of observation in second set of data

$s$  = combined standard deviation from both sets of data

$$= \left( \frac{\sum (x_i - \bar{x})^2 + \sum (y_i - \bar{y})^2}{n_1 + n_2 - 2} \right)$$

### Correlation coefficient

It was employed to find out the relationship of dependent variable with the independent variables

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

$r$  = Correlation coefficient

$n$  = number of respondents

$\sum xy$  = sum of product of  $x$  and  $y$

$\sum x$  = summation of overall dependent variables

$\Sigma y$  = summation of overall independent variables

$\Sigma x^2$  = sum of squared values of dependent variables

$\Sigma y^2$  = Sum of all squared values of independent variables

### Rank order correlation

It was used to measure the relationship between two sets of ranks

$$r_s = \frac{6 \Sigma d_i^2}{(n^2 - n)}$$

where,

$n$  = number of observations in pairs

$\Sigma d_i^2$  = sum of squared values of difference between two sets of ranks

# Findings And Discussion



## Chapter-V

### **FINDINGS AND DISCUSSION**

The empirical results and its discussion have been presented in this chapter. For the purpose of convenience, the presentation has been subdivided under the following heads :

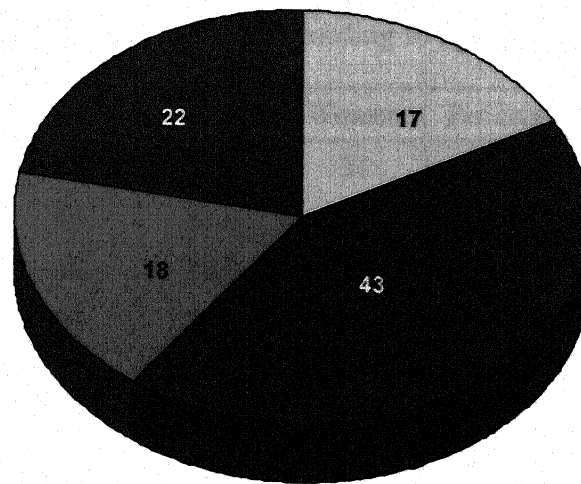
- I. To study the socio-economic characteristics of rural women of the study area.
- II. To study the nature and extent of involvement of rural women and men in agricultural, animal husbandry and household activities in terms of operations and time spent.
- III. To estimate the drudgery profile of men and women in agriculture and animal husbandry practices.
- IV. To isolate the correlates of involvement and drudgery in agricultural and animal husbandry practices.
- V. To suggest the suitable policy measures for improving the status of women involved in agriculture and animal husbandry sector.

#### **Socio-economic profile of women respondents**

As already reported in the chapter on research methodology the data for the study was collected from 100 working couple respondents drawn from different land holding categories. The percentage distribution of the respondents according to their socio-economic profile have incorporated in Table 5.1

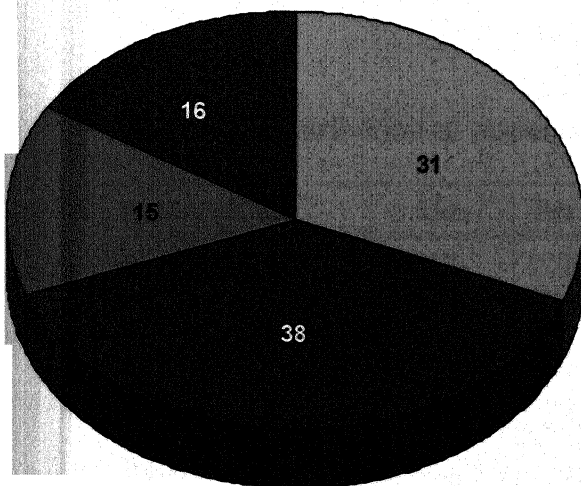
### Men

20-30 30-40 40-50 50-above



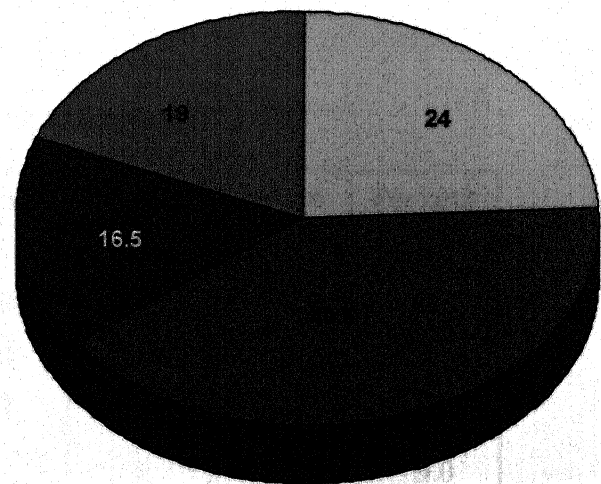
### Women

20-30 30-40 40-50 50-above



### Pooled

20-30 30-40 40-50 50-above



**Fig. 5.1: Age-wise distribution of working couples**

## 1. Age

**Table 5.1** Distribution of respondents according to age

Age group	Men	Per cent	Women	Per cent	Pooled	Per cent
20 – 30	17	17.0	31	31.0	48	24.0
30 – 40	43	43.0	38	38.0	81	40.5
40 – 50	18	18.0	15	15.0	33	16.5
50 & above	22	22.0	16	16.0	38	19.0
Total	100	100.0	100	100.0	200	100.0

Table 5.1 indicates distribution of respondents according to age, maximum 43.0 per cent men respondents were belonged to 30 to 40 years age-group followed by 22.0 per cent men respondents were belonged to 50 & above age group. 38.0 per cent women respondents were belonged to 30 to 40 years age-group. Combined 40.5 per cent respondents were belonged to 30 to 40 years age-group and 24.0 per cent respondents were belonged to 20 to 30 years age group.

## 2. Education

**Table 5.2** Distribution of respondents according to education

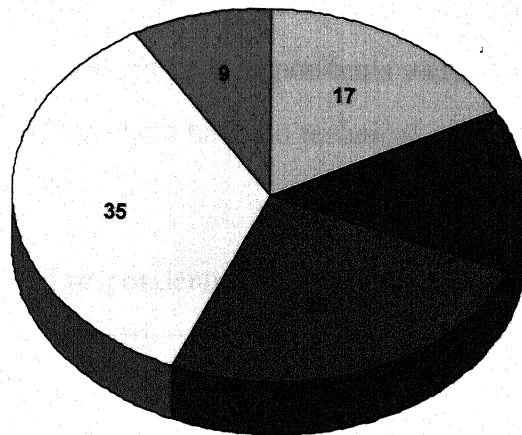
Education	Men	Per cent	Women	Per cent	Pooled	Per cent
Illiterate	17	17.0	45	45.0	62	31.0
Primary	14	14.0	28	28.0	42	21.0
Middle	25	25.0	20	20.0	45	22.5
High school	35	35.0	7	7.0	42	21.0
Intermediate & above	9	9.0	-	-	9	9.0
Technical Education	-	-	-	-	-	-
Total	100	100.0	100	100.0	200	100.0

It is one of the important factors, which accelerates the knowledge of the respondents which in turn accelerates growth and development in farming. It



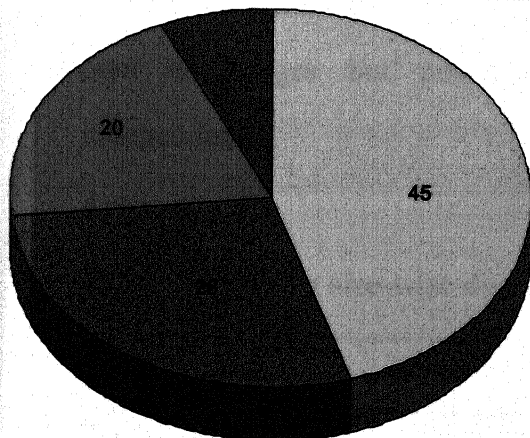
### Men

■ Illiterate ■ Primary ■ Middle ■ High school ■ Intermediate & above



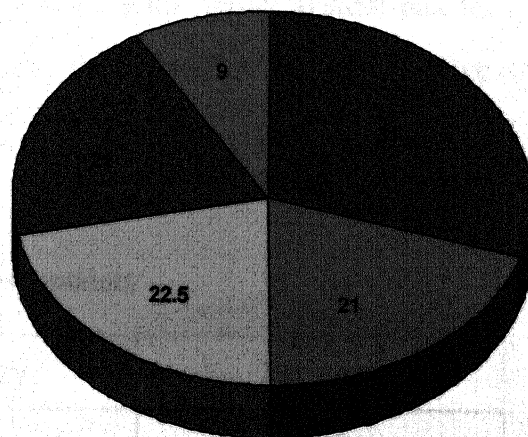
### Women

■ Illiterate ■ Primary ■ Middle ■ High school ■ Intermediate & above



### Pooled

■ Illiterate ■ Primary ■ Middle ■ High school ■ Intermediate & above



**Fig. 5.2: Education-wise distribution of working couples**

was observed in this study that 35.0 per cent men respondents were having education high school followed by 25.0 per cent men respondents were having education middle level. Maximum 45.0 per cent women respondents were having uneducated and 20.0 per cent women respondents were having middle level education. Overall 31.0 per cent respondents were found to be illiterate. No respondents in both category were have no technical education (Table 5.2).

### 3. Family type

**Table 5.3** Distribution of respondents according to type of family

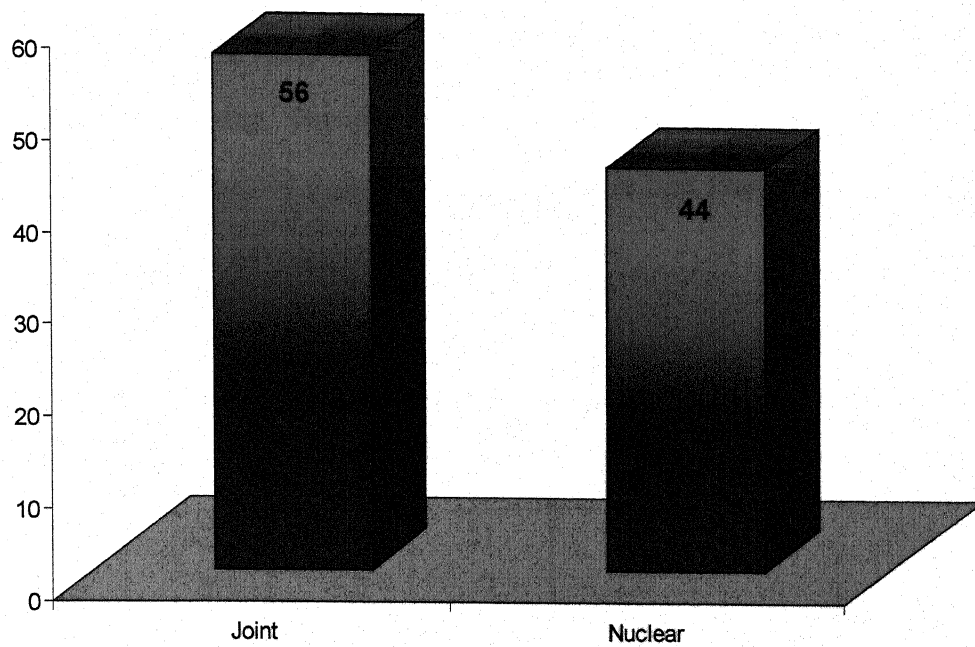
Family type	Frequency	Per cent
Nuclear	44	44.0
Joint	56	56.0
Total	100	100.0

It is evident from Table 5.3 that 56.0 per cent of total households under study were having joint family system and 44.0 per cent of total households under study were having nuclear families. Though, joint family system has its own advantages but now-a-days most of the families prefer to live independently.

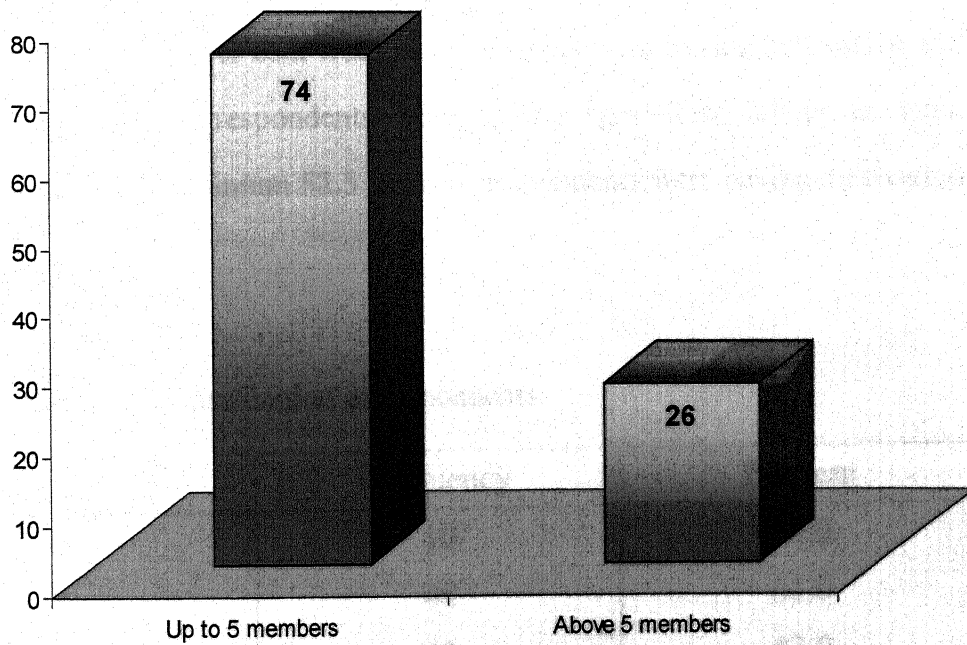
### 4. Family size

**Table 5.4** Family size-wise distribution of respondents

Family size	Frequency	Per cent
Up to 5 members	74	74.0
Above 5 members	26	26.0
Total	100	100.0



**Fig. 5.3: Distribution of working couples according to type of family**



**Fig. 5.4: Family-size of working couple**

The small family norm as propagated by the government has not been able to get adopted by rural mass because of extensive labour force is demanded for meeting needs of farming. This phenomenon can be seen from the perusal of Table 5.4 which shows that 74.0 per cent families have less than five members and 26.0 per cent families have more than five members.

## 5. Occupation

**Table 5.5** Occupation-wise distribution of men and women respondents

Occupation	Men	Per cent	Women	Per cent	Pooled	Per cent
Agriculture labour	32	32.0	31	31.0	63	31.5
Caste occupation	5	5.0	2	2.0	7	3.5
Business	13	13.0	1	1.0	14	7.0
Cultivation	39	39.0	66	66.0	105	52.5
Service	11	11.0	-	-	11	5.5
Total	100	100.0	100	100.0	200	100.0

Table 5.5 reveals that 39.0 per cent men respondents were having cultivation followed by 32.0 per cent men respondents were having agriculture labour. Maximum 66.0 per cent women respondents were having cultivation and 31.0 per cent women respondents were having agriculture labour as main occupation. Overall maximum 52.5 per cent respondents were having cultivation as main occupation.

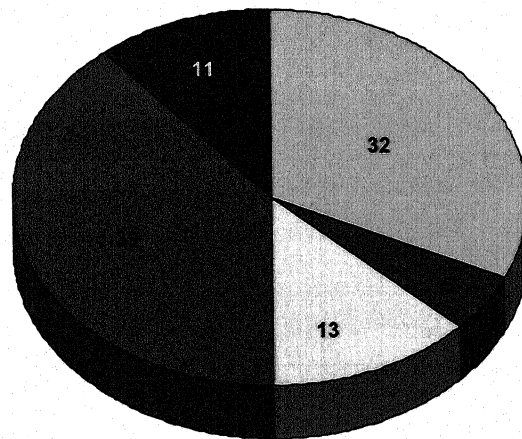
## 6. Caste

**Table 5.6** Caste-wise distribution of respondents

Caste	Frequency	Per cent
Upper caste	10	10.0
OBC	48	48.0
SC	42	42.0
Total	100	100.0

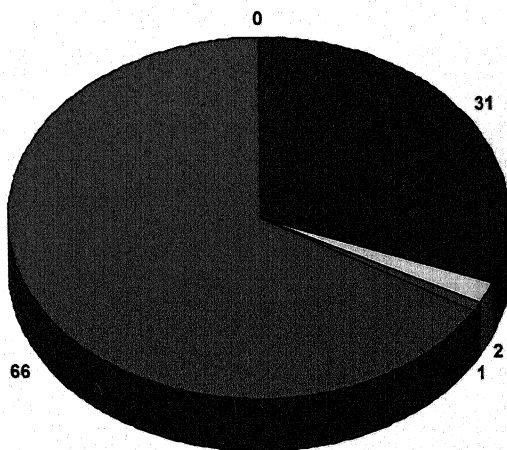
### Men

■ Agriculture labour ■ Caste occupation □ Business ■ Cultivation ■ Service



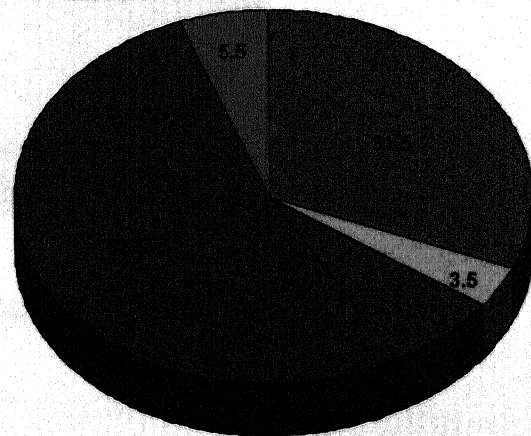
### Women

■ Agriculture labour □ Caste occupation  
■ Business ■ Cultivation  
■ Service

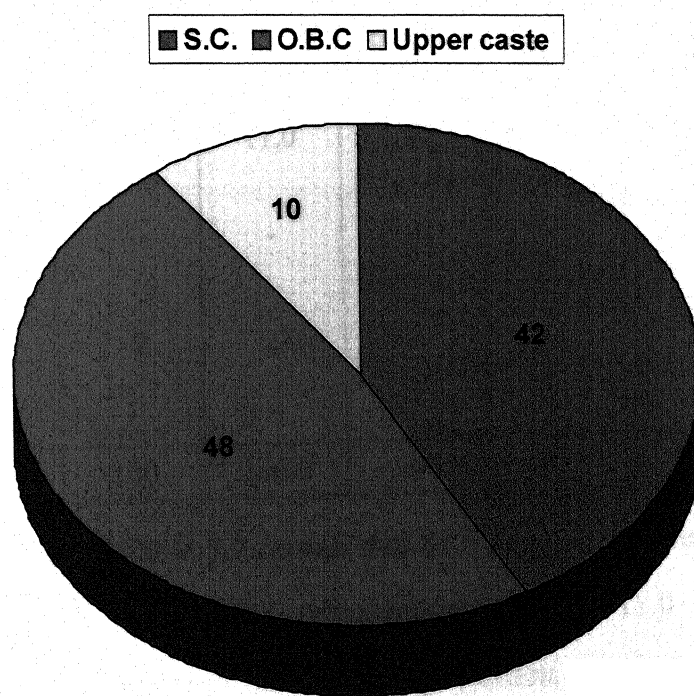


### Pooled

■ Agriculture labour ■ Caste occupation  
■ Business ■ Cultivation  
■ Service



**Fig. 5.5: Occupation-wise distribution of men and women respondents**



**Fig. 5.6: Caste-wise distribution of working couples**

In rural areas, caste is an important social institution. Maximum 48.0 per cent respondents were of OBC followed by 42.0 per cent respondents were of belonged to SC. Minimum 10.0 per cent respondents were belonged to upper caste (Table 5.6).

## 7. Social participation

**Table 5.7** Social participation of men and women respondents

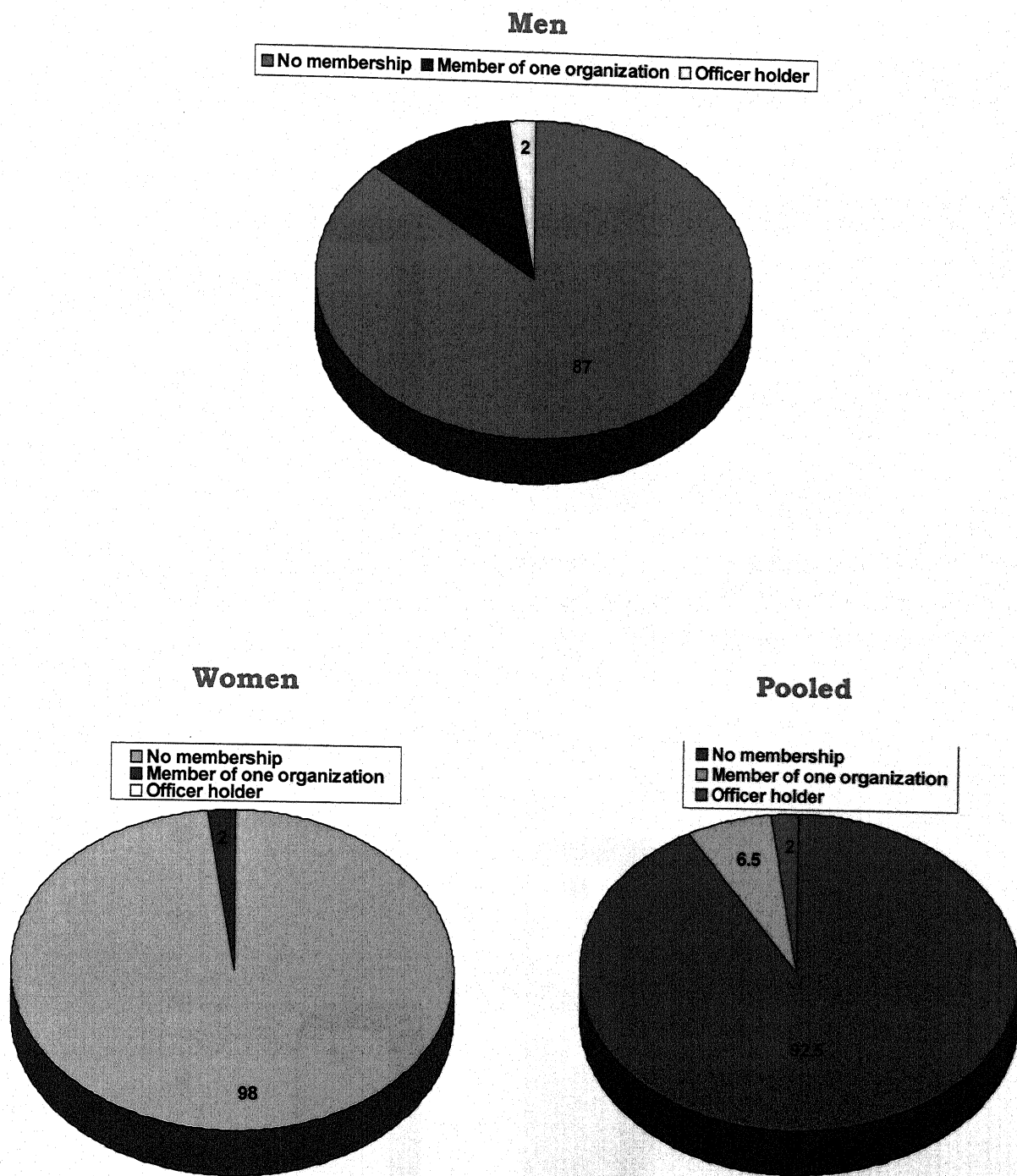
Social participation	Men	Per cent	Women	Per cent	Pooled	Per cent
No participation	87	87.0	98	98.0	185	92.5
Member of one organization	11	11.0	2	2.0	13	6.5
Member of more than one organization	-	-	-	-	-	-
Office holder	2	2.0	-	-	2	2.0
Wider public	-	-	-	-	-	-
Total	100	100.0	100	100.0	200	100.0

The perusal of Table 5.7 reveals that 87.0 per cent men respondents have no participation in any social organization whereas 11.0 per cent men respondents were members of one social organization. Maximum 98.0 per cent women respondents have no participation in any social organization. Overall 92.5 per cent respondents have no participation in any social organization. This clearly points out the fact that rural respondents, generally, do not take part in social activities and keep themselves away from social institutions.

## 8. House type

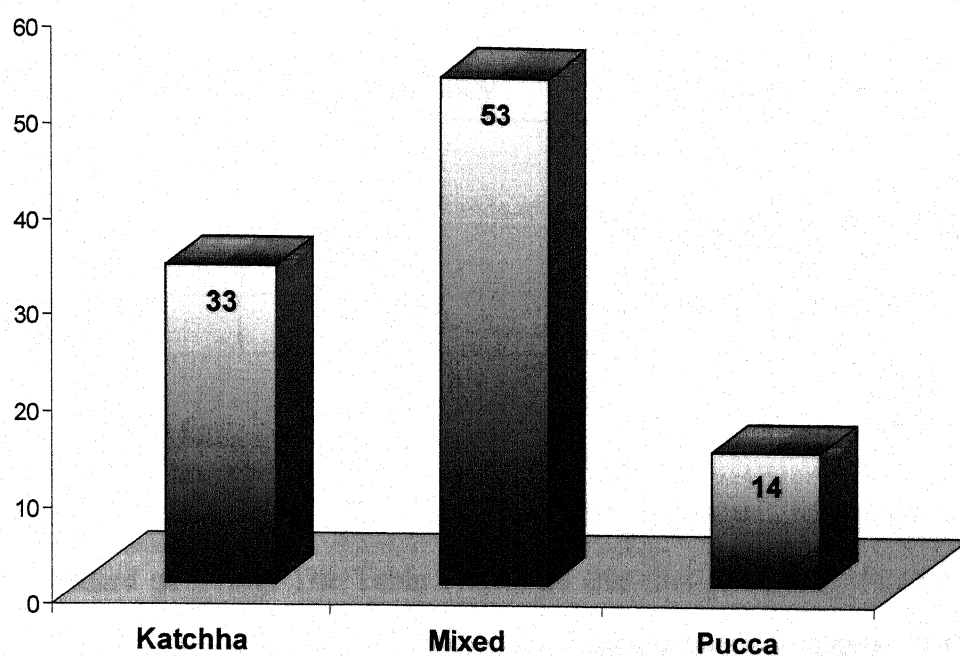
It was observed that 53.0 per cent of respondents resided in mixed type of houses and 33.0 per cent of the respondents were resided Kachcha house. Maximum 14.0 per cent respondents were resided Pucca house.



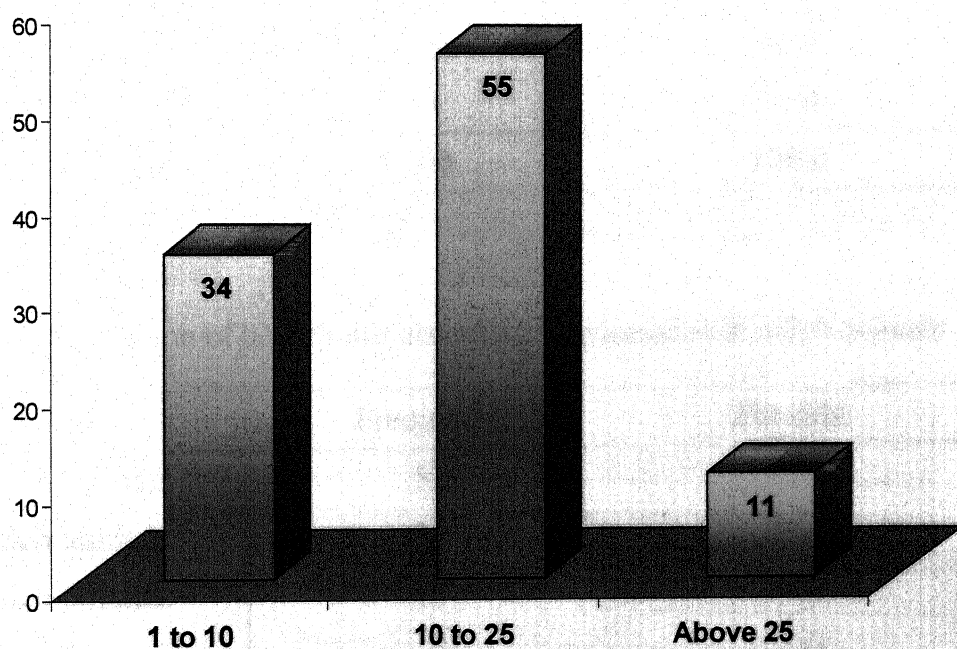


**Fig. 5.7: Social participation of working couples**





**Fig. 5.8: Distribution of working couple according to type of houses**



**Fig. 5.9: Distribution of households according to materials possession**

**Table 5.8** Distribution of respondents according to type of houses

Type of house	Frequency	Per cent
Kachcha	33	33.0
Mixed	53	53.0
Pucca	14	14.0
Total	100	100.0

## 9. Materials possession

Now a days possession of modern household appliances and gadgets decide the standard of living. The Table 5.9 reveal this fact because more than fifty per cent households of the study areas possessed between 10-25 items. 34.0 per cent respondents have 1 to 10 items.

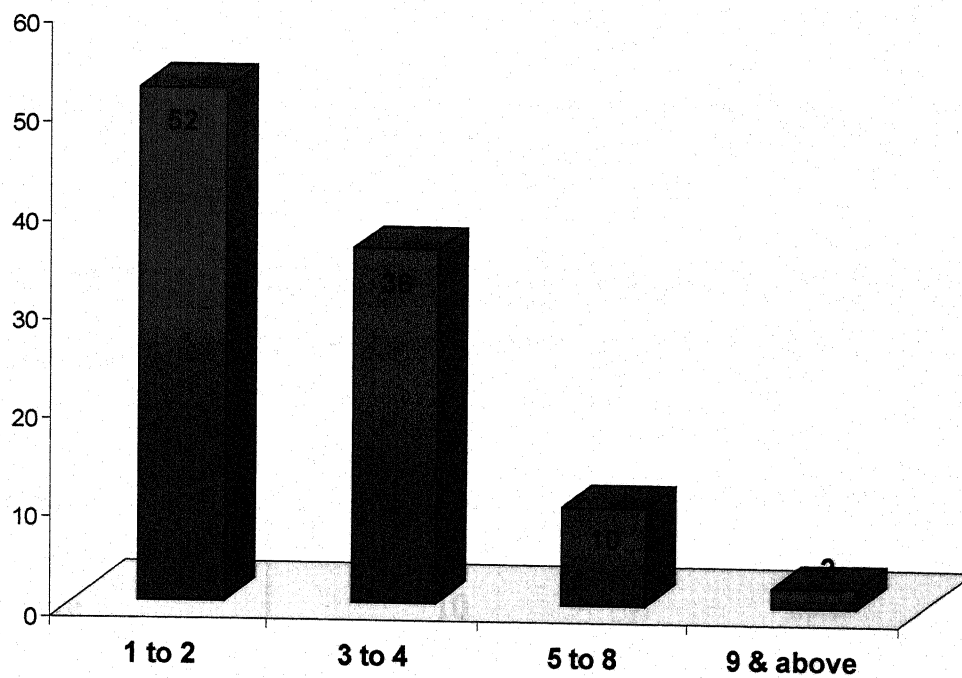
**Table 5.9** Distribution of respondents according to material possession

Material possession	Frequency	Per cent
1 – 10	34	34.0
10 – 25	55	55.0
Above 25	11	11.0
Total	100	100.0

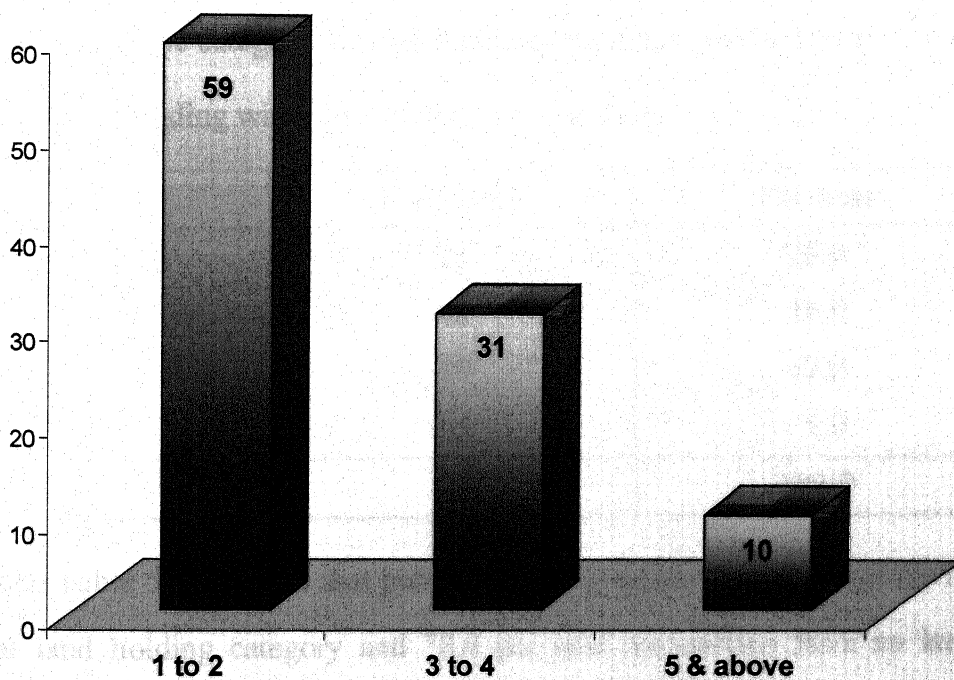
## 10. Milch animals

**Table 5.10** Distribution of households according to possession of milch animals

Milch animals	Frequency	Per cent
1 – 2 milch animals	52	52.0
3 – 4 milch animals	36	36.0
5 – 8 milch animals	10	10.0
9 and above	2	2.0
Total	100	100.0



**Fig. 5.10: Distribution of households according to possession of milch animals**



**Drought animals**

**Fig. 5.11: Distribution of households according to possession of farm power**

Table 5.10 reveals that 52.0 per cent households were possessing 1-2 milch animals and 36.0 per cent household possessed 3 to 4 milch animals. Only 2 per cent respondents possessed 9 and above milch animals.

### 11. Farm power

**Table 5.11** Distribution of households according to possession of farm power

Farm power	Frequency	Per cent
1 – 2 drought animals	59	59.0
3 – 4 drought animals	31	31.0
5 and above	10	10.0
Tractor	-	-
Total	100	100.0

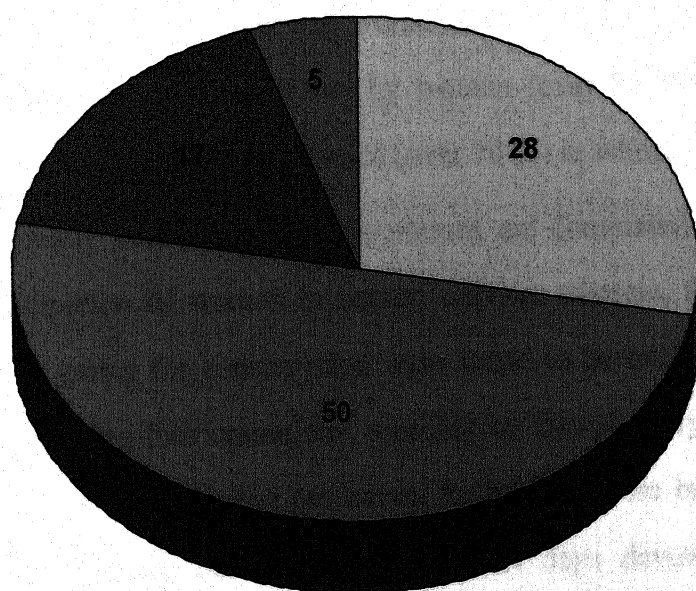
It was observed that 59.0 per cent households possessed 1 to 2 drought animals and 31.0 per cent households possessed 3 to 4 drought animals. These households fall in the category of small and large holdings (Table 5.11).

**Table 5.12** Landholding wise distribution of households

Category	Frequency	Per cent
Landless	28	28.0
Marginal	48	48.0
Medium	19	19.0
Large	5	5.0
Total	100	100.0

The Table 5.12 reveals that just half per cent of respondents were having marginal land holding category and 28.0 per cent respondents have no land. Minimum 5.0 per cent respondents were having large land holding category for cultivation.

■ Landless ■ Marginal ■ Medium ■ Large



**Fig. 5.12: Land holding -wise distribution of working couples**

## INVOLVEMENT OF MEN AND WOMEN IN AGRICULTURE, ANIMAL HUSBANDRY AND HOUSEHOLD ACTIVITIES

The data reported in Table 5.13 indicate that in case of wheat and paddy cultivation, there are six operation pesticide dusting, spade work during field irrigation, field preparation, sowing, manure and fertilizer application and marketing of grains, which were performed exclusively by men. There is only one operation namely keeping part of grains for consumption which was performed exclusively by women. The remaining five operations namely weeding by kasola, weeding by khurpi, carrying load on head, harvesting and threshing are performed both by men and women. Out of these five operations, carrying load is predominantly performed by women (over 85 %). The other operations viz., weeding by kasola and khurpi (over 70 %) in wheat.

In case of paddy cultivation same operations are dominated by men but there is little participation of women in nursery raising, whereas, transplanting and keeping part of grains for consumption were found to be exclusive domain of women. The remaining four operations, weeding by khurpi, carrying load on head, harvesting and threshing were performed by both of them but man days devoted by women heavily out numbered the man days devoted by men. Weeding and carrying load on head were predominantly (to the extent of 80 %) performed by women. Even in case of harvesting and threshing about 55 per cent of the operations are performed by women. A similar finding has also been reported by Varma (1989). Domination of female in paddy transplanting is also reported in the studies conducted by Charu Lata (1992), Verma (1989) and Kaur (1987). Similarly, harvesting and weeding were also the major jobs of women folk engaged in agriculture. Studies by Charu Lata (1992), Varma (1989), Pandey *et al.* (1988) and Kaur (1987) conducted in different parts of India, also support the present findings.



**Table 5.13** Farm operations undertaken by men and women in wheat and paddy in terms of man days

Operations	Wheat		Paddy	
	Male	Female	Male	Female
<b>1. Male dominated</b>				
Pesticide dusting	68.4(100.0)	-	69.6(100.0)	-
Spade work during irrigation	66.8(100.0)	-	74.5(100.0)	-
Field preparation	76.6(100.0)	-	62.4(100.0)	-
Nursery raising/sowing	56.8(100.0)	-	44.5 (81.7)	10.0 (18.3)
Manure and Fertilizer	18.7(100.0)	-	28.8(100.0)	-
Marketing of grains	69.6(100.0)	-	74.4(100.0)	-
<b>2. Female dominated</b>				
Weeding by kasola	32.4(28.2)	82.4(71.8)	-	-
Weeding by khurpi	12.6(6.2)	189.6(93.8)	34.7(27.3)	92.4(72.7)
Carrying load on head	8.4 (4.9)	162.4(95.1)	8.8 (10.8)	72.6(89.2)
Transplanting	-	-	-	168.6(100.0)
Keeping part of grains for consumption	-	127.4(100.0)	-	79.4 (100.0)
<b>3. Jointly operated operation</b>				
Harvesting	222.3(43.4)	289.4(56.6)	302.4(42.8)	403.5(57.2)
Threshing	84.6(59.4)	57.8(40.6)	55.5(43.3)	72.6(56.7)

(Figures in parentheses indicate the percentage of the total man-days deployed in the operation by men and women)

Attempts were made in this study to find out the significant difference in the involvement of men and women of various land holding categories in selected crop cultivation. The mean scores of the involvement of rural men and women in wheat cultivation with 't' values have been incorporated in Table 5.14. The results reveal that in male dominated operations (ploughing, sowing, manure and fertilizer application, spade work during field irrigation, pesticide and marketing of grains), however, in case of female dominated operations (weeding by 'khurpi', carrying load on head, keeping part of grains for

consumption). The mean scores of women's involvement were quite higher than that of men in landless, small and marginal, medium and large land holding categories as well as in pooled data.

The data further unfolds the fact that in jointly carried operations the mean scores of women's involved were higher only in large land holding as well as in pooled data, but it does not show significant difference between men and women involvement in any of land holding category, as evident from Table 5.14.

**Table 5.14** Involvement in various operations inter gender variation (wheat)

Operations	Land holding	Man days		't' value
		Male	Female	
Male dominated operations	Landless	3.06	-	-
	Small and marginal	2.82	-	-
	Medium	2.01	-	-
	Large	3.00	-	-
	Total	2.61	-	-
Female dominated operations	Landless	0.92	7.72	4.34*
	Small and marginal	0.85	7.58	4.56*
	Medium	0.62	7.24	7.26*
	Large	0.52	6.88	7.32*
	Total	0.78	7.71	8.14*
Jointed operated operations	Landless	4.24	4.11	0.63
	Small and marginal	4.36	4.16	0.59
	Medium	4.31	4.12	0.65
	Large	4.02	4.08	1.13
	Total	4.15	4.11	1.02
Overall operations	Landless	9.23	13.24	4.28*
	Small and marginal	9.01	12.52	4.36*
	Medium	8.21	12.36	5.15*
	Large	8.16	12.14	5.26*
	Total	8.54	12.42	5.36*

\* Significant at 5 per cent level of significance



The Table 5.14 further shows that the average workload of men and women of landless category were higher than those in case of small and marginal, medium and large land holding category, in all the operations. It may, therefore, be inferred that landless women performed more work in crop cultivation than the women of small and marginal, medium and large landholding categories. The obtained involvement pattern confirm heavy workload of women of landless category, probably due to their being landless and wage earners. As these womenfolk are left with no alternative for their livelihood they are pushed into less skilled, low paying more time consuming and drudgery prone activities. Similar findings have also been reported by Varma (1989), Pandey *et al.* (1988), Jesani (1990) and Shatrugna (1990).

Table 5.15 indicates that in case of paddy cultivation, the overall mean score of the involvement of farm-women was more than men in landless, small and marginal, medium and large landholding categories as well as in pooled data. There was significant difference between involvement pattern of men and women in paddy cultivation. It may, therefore, be inferred that women from different landholding categories spend more time (in terms of man days) than men in paddy cultivation. Amongst other operations (ploughing, puddling, manure and fertilizer application, nursery raising, spade work during field irrigation, pesticide dusting and marketing of grains) women's involvement was of low level in all the landholding categories. However, in case of female denominated operations (transplanting, weeding by khurpi, carrying load on head, keeping part of grains for consumption) the mean score of women's involvement was much higher than that of men in all categories. However, in case of jointly carried operations (harvesting and threshing) the female mean scores were higher than male but it did not show significant difference between the involvement pattern of men and women in terms of 't' values in the landless,

small and marginal and medium landholding categories. But it showed significant difference between involvement of men and women in large landholding as well as for pooled data. Similar findings have also been reported by Charu Lata (1992), Varma (1989), Pandey *et al.* (1988), Jesani (1990), Shatrugna (1990) and Kaur (1987).

**Table 5.15** Involvement in various operations inter gender variation (paddy)

Operations	Land holding	Man days		't' value
		Male	Female	
Male dominated operations	Landless	4.18	1.01	5.63
	Small and marginal	3.89	1.02	5.82
	Medium	3.09	1.15	3.27
	Large	3.49	0.11	6.28
	Total	3.78	0.93	10.17
Female dominated operations	Landless	0.78	5.56	9.76
	Small and marginal	0.96	5.98	9.40
	Medium	0.83	5.66	8.09
	Large	0.98	4.97	4.98
	Total	1.01	5.85	15.13
Jointed operated operations	Landless	4.18	5.78	0.66
	Small and marginal	3.59	5.68	0.52
	Medium	3.88	4.53	0.77
	Large	3.69	5.25	2.74
	Total	3.89	5.20	2.71
Overall operations	Landless	8.28	10.80	2.86
	Small and marginal	7.12	10.56	2.79
	Medium	7.01	9.96	2.74
	Large	7.00	9.46	2.89
	Total	6.81	10.24	3.01

\* Significant at 5 per cent level of significance

Per day participation of men and women (in terms of average man days) in various activities of animal husbandry is reported in Table 5.16 with inter-sex

variations ('t' values). In case of bringing fodder from field, the mean score of women's workload was higher than men's workload. But there is significant difference between landless and small and marginal as well as in pooled sample, whereas, in case of chaffing the fodder the mean score of women's workload was higher than that of men but there was no significant difference between men's and women's workload. In overall operations, the mean score of women's workload in animal husbandry operation were substantially higher than men's workload and there was significant difference between men's and women's workload. It may, therefore, be concluded that animal husbandry is predominantly a female affair irrespective of their landholding categories. Similar results were reported by Jain (1991), Varma (1989), Singh *et al.*, (1986).

**Table 5.16** Involvement in various operations – animal husbandry

Operations	Land holding	Man days		't' value
		Male	Female	
Bringing fodder	Landless	0.04	0.13	2.72
	Small and marginal	0.02	0.12	2.71
	Medium	0.03	0.06	0.23
	Large	0.03	0.06	0.31
	Total	0.04	0.12	2.89
Chaffing the fodder	Landless	0.02	0.04	0.52
	Small and marginal	0.02	0.04	0.62
	Medium	0.01	0.03	0.63
	Large	0.01	0.02	0.62
	Total	0.02	0.03	0.62
Prepare feed for animals	Landless	0.01	0.04	2.84
	Small and marginal	0.01	0.03	2.74
	Medium	-	0.03	-
	Large	-	0.04	-
	Total	0.01	0.03	4.73

Cleaning of animals	Landless	0.01	0.06	3.30
	Small and marginal	0.01	0.05	3.22
	Medium	-	0.03	3.30
	Large	-	0.04	3.91
	Total	0.01	0.04	5.74
Milking	Landless	0.01	0.07	4.12
	Small and marginal	0.01	0.07	4.32
	Medium	-	0.01	2.89
	Large	0.01	0.03	1.11
	Total	0.01	0.04	7.31
Offering water to animals	Landless	0.01	0.02	3.50
	Small and marginal	0.01	0.03	3.11
	Medium	0.01	0.01	2.72
	Large	-	0.02	2.01
	Total	0.01	0.02	3.48
Preparation of cow dung cakes	Landless	-	0.04	-
	Small and marginal	-	0.04	-
	Medium	-	0.03	-
	Large	-	0.03	-
	Total	-	0.04	-
Cleaning of cattle shed	Landless	-	0.06	-
	Small and marginal	-	0.05	-
	Medium	-	0.04	-
	Large	-	0.04	-
	Total	-	0.05	-
Ghee making	Landless	-	0.08	-
	Small and marginal	-	0.08	-
	Medium	-	0.08	-
	Large	-	0.09	-
	Total	-	0.08	-
Overall	Landless	0.12	0.33	4.98
	Small and marginal	0.12	0.33	4.79
	Medium	0.11	0.33	4.38
	Large	0.13	0.32	3.73
	Total	0.13	0.33	18.42

**Table 5.17** Involvement in various operations – household activity

Operations	Land holding	Man days		't' value
		Male	Female	
Pre-cooking activity	Landless	-	0.11	
	Small and marginal	-	0.11	
	Medium	-	0.12	
	Large	-	0.13	
	Total	-	0.12	
Cooking activity	Landless	-	0.19	
	Small and marginal	-	0.19	
	Medium	-	0.18	
	Large	-	0.22	
	Total	-	0.20	
Washing of clothes	Landless	-	0.09	
	Small and marginal	-	0.10	
	Medium	-	0.10	
	Large	-	0.11	
	Total	-	0.10	
Cleaning of house	Landless	-	0.04	
	Small and marginal	-	0.05	
	Medium	-	0.07	
	Large	-	0.08	
	Total	-	0.06	
Care of children	Landless	-	0.18	
	Small and marginal	-	0.17	
	Medium	-	0.12	
	Large	-	0.08	
	Total	-	0.13	
Overall operations	Landless	-	0.62	
	Small and marginal	-	0.62	
	Medium	-	0.71	
	Large	-	0.88	
	Total	-	0.79	

The data pertaining to time spent by rural women in different household activities in the present study have been incorporated in Table 5.17. It can be observed that in household activities viz., pre-cooking, cooking, washing clothes, cleaning house, care of children as well as in overall, the mean score of men's involvement was negligible in all landholding categories. It may be inferred that women exclusively perform all the household tasks.

### **COMPARATIVE DRUDGERY INDEX OF MEN AND WOMEN FOR DIFFERENT FARM OPERATIONS**

The drudgery scale values of the farm operations calculated by III model of Thurstone's law of comparative judgement as discussed in detail in the chapter 'Research Methodology' for male and female respondents are depicted in Table 5.18. In order to test the validity of these generalizations, drudgery associated with the major farm operations involved in cultivation of wheat and paddy crops were worked out. As evident from the data, there is some difference in the two sets of rank assigned to the practices. The rank order correlation coefficient between them, were worked out to be 0.712\* which is significant at 5 per cent level of significance. The results, therefore, indicate that the two sets of values obtained from the responses of men and women farm workers are almost alike or at least very close to each other.

As evident from the unified drudgery index (Table 5.18) puddling by plough is considered to have the highest amount of drudgery followed by weeding by khurpi, bullock ploughing, transplanting, sowing behind plough, weeding by kasola, spade work during field irrigation, carrying load on head, harvesting and pesticide dusting.

The average drudgery data for men and women are reported in Table 5.19 which reveal that there is a significant difference in the total drudgery taken by men and women in cultivation of wheat and paddy, both. In both the cases, the



drudgery load of women is more than that of men. It further unfolds the fact that the 't' values in case of both wheat and paddy cultivation were found to be significant. It is of interest to note that in case of wheat and paddy cultivation per man day drudgery taken up by women is more than that by men. Yet, the total drudgery as well as per man day drudgery suffered by women in both the cases were higher than men. This is due to the reason that women perform more hours of work than men in cultivation of both wheat and paddy. It is obvious from the findings reported above that the tasks in which women are exclusively or predominantly involved are such that they consume more time and account for greater total drudgery in spite of their drudgery value being not so high.

**Table 5.18** Drudgery assigned to the selected farm operations by men and women farm workers

Operations	Drudgery assigned			
	Men	Rank	Women	Rank
Pesticide dusting	0.462	IX	-	IX
Harvesting	0.615	VI	0.189	VI
Carrying load on head	0.473	VIII	0.472	IV
Spade work	0.816	IV	0.510	III
Transplanting	0.821	III	0.638	I
Weeding by Kasola	0.866	II	0.611	II
Weeding by Khurpi	0.912	I	0.472	IV
Sowing behind plough	0.717	V	0.413	V
Bullock ploughing	0.513	VII	0.112	VII
Puddling by plough	-	X	0.082	VIII
Rank correlation	0.712* P < 0.05			

A further probe in the matter revealed why drudgery was perceived in the selected operation. This is being reported in tabular form as under :

Operations	Reasons
Pesticide dusting	(a) Health hazards due to pesticide inhalation. (b) Movement in the standing crop with care not to damage the plants. (c) Discomfort in carrying load of the machine and pesticide.
Harvesting	(a) Posture of bending or sitting on toe (b) Energy required in holding a bunch of plants by one hand and cutting them by the other hand. (c) Sitting the lodged plants in order and taking care that grains do not shatter. (d) Keeping the harvested plants with adequate care so that bundle making is easy.
Carrying load on head	(a) Carrying head load of harvested crop with strained movement of eyes and neck.
Spade work during irrigation	(a) Energy required in the earth work (b) Discomfort in movement in the cropped field and wet soil
Weeding by Khurpi	(a) Sitting on toe for long hours (b) Care to avoid injury to cultivated plants while being in thick of them
Weeding by Kasola	(a) Posture of bending (b) Energy and care required to uproot the weeds without damaging cultivated plants
Transplanting	(a) Posture of being for long hours in standing water
Sowing behind plough	(a) Sowing seeds with bent spinal cord and neck (b) Care and skill in putting seeds in uniformity
Bullock ploughing	(a) Controlling bullocks (b) Obstructed movement in the field
Puddling by plough	(a) Discomfort in movement in wet field with puddler (b) Controlling bullocks.



**Table 5.19** Inter-gender drudgery taken up by men and women in cultivation of one acre of wheat and paddy

Crop	Sex	Average drudgery taken up	't' value	Average drudgery per man day	't' value
Wheat	Men	4.85	5.81*	0.43	5.24*
	Women	7.62		0.68	
Paddy	Men	6.74	3.89*	0.55	5.11*
	Women	8.20		0.68	

\* Significant at 0.05 level of significance

### COMPARATIVE DRUDGERY INDEX OF FARM MEN AND WOMEN FOR ANIMAL HUSBANDRY PRACTICES

The drudgery scale values of the animal husbandry operations calculated by case III model of Thurstone's law of comparative judgement for male and female respondents in Table 5.20. The scale values in case of men respondents vary between 0.00 and 1.164, whereas in case of women they vary between 0.00 and 0.598. The scale values of the practices were ranked in descending order of magnitude. The rank order correlation coefficient between them were worked out to be 0.452, which was found to be non-significant at 5 per cent level of significance. As evident from the drudgery index of men, cleaning of animal is considered to have the highest amount of drudgery followed by preparing feed for animals, chaffing the fodder, cleaning of cattle shed, offering water to animals from ticks and lice, bring fodder from field, milking and ghee making.. Whereas, in case of women's drudgery in drudgery index through bringing fodder from field considered to have the highest amount of drudgery followed by preparing feed for animals.

The average drudgery data for men and women are depicted in Table 5.20 which reveal that there is a significant difference in total drudgery and per man day drudgery taken up by men and women in animal husbandry operations in their own family.

**Table 5.20** Drudgery assigned to animal husbandry operations by men and women

Operations	Drudgery assigned			
	Men	Rank	Women	Rank
Bringing fodder from field	0.626	VII	0.598	I
Chaffing the fodder	1.113	III	0.312	VII
Prepare feed for animals	1.132	II	0.362	VI
Offering water to animals	0.812	V	0.413	III
Cleaning of animals	1.164	I	0.221	VIII
Cleaning of cattle shed	1.013	IV	0.466	II
Preparation of cow dung cakes	0.714	VI	0.388	V
Milking	0.423	VIII	0.411	IV
Ghee making	0.000	IX	0.000	IX
Rank correlation	0.452			

A further probe in the matter revealed, why drudgery was perceived in the selected operations. This is being reported in tabular form as under :

Operations	Reasons
Bringing fodder from field	(a) Carrying head load of harvested fodder with strained movement of eyes and neck
Chaffing the fodder	(a) Posture of bending for long hours. (b) Chopping the fodder with bent spinal cord and neck.
Prepare feeding for animals	(a) Prepare feed with bent spinal cord. (b) Stained movement of shoulder and neck
Offering water to animals	(a) Energy required in bring water

Protect animals from ticks and lice	(a) Posture of sitting on toe
Cleaning of animals	(a) Energy required in cleaning the animals
Cleaning of cattle shed	(a) Posture of bending (b) Carrying head load of cow dung with strained movement of eyes and neck.
Preparation of cow dung	(a) Posture of bending. (b) Sitting on legs for long hours.
Milking	(a) Posture of sitting on toe (b) Strained movement of hand
Ghee making	(a) Strained movement of neck, eyes and shoulder. (b) Care and skill in churning the milk.

The drudgery load of family women is more than that of family men and the 't' values were also found to be significant. This is due to the reason that women perform more work than men in animal husbandry operations. This clearly points to the conformity of workload being carried out by a women in the farming community. Same conclusion were arrived at by Jain (1991).

**Table 5.21** Inter-gender drudgery taken up by men and women in animal husbandry operations

Animal husbandry	Sex	Average drudgery taken up	't' value	Average drudgery per man day	't' value
	Men	0.89	3.98*	2.21	3.29*
	Women	1.96		3.49	

\* Significant at 0.05 level of significance

### RELATIONSHIP BETWEEN SOCIO-PERSONAL AND ECONOMIC VARIABLES WITH INVOLVEMENT OF MEN AND WOMEN FOR CULTIVATION OF DIFFERENT CROPS

The results have been reported in Table 5.22 in case of pooled sample, all the variables i.e. age, caste, education, family size, family type of house and farm power were found to be non-significant with involvement in wheat cultivation. Similarly, in case of men and women sampled respondents, none of the variables was found to be significant. Thus it can be concluded that the workload of women was more in cultivation of wheat, but it could not show its relationship with identified variables.

**Table 5.22** Relationship between socio-personal and economic variables and involvement of men and women in wheat cultivation operations

Independent variables	Women 'r' value	Men 'r' value	Combined 'r' value
Age	-0.004	0.131	0.006
Caste	-0.026	0.112	0.073
Education	0.112	-0.001	0.084
Family size	-0.101	0.020	0.009
Family type	0.081	-0.013	0.062
Type of house	0.012	0.033	0.012
Farm power	0.033	0.132	0.027
Social participation	-0.113	-0.006	-0.037

The data related to the correlates of workload undertaken by men, women and pooled sample in paddy cultivation are reported in Table 5.22. In case of the pooled sample, all the variables were found to be non-significant with involvement in paddy cultivation except education, which was significantly but negatively correlated. It may be due to the fact that educated respondents used to undertake lower workload as they had employed casual labour or permanent labour for paddy cultivation operations. Similar findings were reported by Charu Lata (1992) and Varma (1989).

**Table 5.23** Relationship between socio-personal and economic variables and involvement of men and women in paddy cultivation operations

Independent variables	Women 'r' value	Men 'r' value	Combined 'r' value
Age	0.015	0.023	0.019
Caste	0.048	0.024	0.023
Education	-0.128	0.015	-0.326*
Family size	0.008	-0.134	-0.006
Family type	0.128	0.126	0.015
Type of house	0.052	0.021	-0.025
Farm power	0.142	-0.102	0.002
Social participation	-0.035	-0.001	-0.031

\*  $P < 0.05$

### RELATIONSHIP BETWEEN SOCIO-PERSONAL VARIABLES WITH DRUDGERY OF MEN AND WOMEN IN CULTIVATION OF DIFFERENT MAJOR CROPS

**Table 5.24** Relationship between socio-personal and economic variables and drudgery undertaken by men and women in wheat cultivation operations

Independent variables	Women 'r' value	Men 'r' value	Combined 'r' value
Age	0.015	-0.115	0.013
Caste	0.046	-0.112	0.073
Education	-0.046	-0.017	-0.021
Family size	-0.048	-0.016	-0.025
Family type	0.015	-0.084	0.038
Type of house	0.137	0.117	0.113
Farm power	-0.052	-0.054	-0.053
Social participation	-0.047	-0.113	0.085

The socio-economic characteristics of the respondents from different landholding categories influence the drudgery undertaken by them, and if so, then in what way the data reported in Table 5.24 reveal that in case of sampled



women, men and pooled sample, none of the variable was found to be significant with drudgery undertaken by them in cultivation of wheat. Similar findings were reported by Varma (1989).

The data reported in Table 5.25 reveal that the in case of women respondents, none of the variable was found to be significant with drudgery in paddy cultivation. In case of men sampled data, only family educational status was found to be significant but negatively correlated. It reveals that respondents from low family educational status used to take more drudgery workload than the respondents who are having high family educational status whereas in case of pooled sample except education, all other variables were found to be non significantly correlated. It may be due to the reason that illiterate respondent used to undertake higher drudgery load, as they had been employee as casual or permanent labour for paddy cultivation operations by large landholders, due to which the drudgery undertaken by them increased considerably. These findings are supported by Charu Lata (1992) and Varma (1989).

**Table 5.25** Relationship between socio-personal and economic variables and drudgery undertaken by men and women in paddy cultivation operations

Independent variables	Women 'r' value	Men 'r' value	Combined 'r' value
Age	0.025	0.007	0.018
Caste	-0.021	-0.068	-0.002
Education	-0.082	-0.057	-0.284
Family size	0.031	-0.092	-0.024
Family type	-0.014	0.015	-0.013
Type of house	0.027	0.115	0.018
Farm power	0.078	-0.102	-0.089
Social participation	0.089	0.047	-0.024

## RELATIONSHIP BETWEEN SOCIO-ECONOMIC VARIABLES WITH INVOLVEMENT OF MEN AND WOMEN FOR ANIMAL HUSBANDRY PRACTICES

The workload data of all the respondents in animal husbandry were pooled and its relationship with socio-economic variables was studied for the men, women and total respondents, the results have been reported in Table 5.26.

In case of pooled sample, all the variables found to be non-significant with involvement in animal husbandry practices except farm power (-0.256\*), caste (-0.291\*) and education (-0.268\*) were significant but negatively correlated. It may be due to the fact that respondents of lower caste, less educated, owning less farm power and having less number of milch animals used to take more workload. In case of sampled men respondents, only farm power were found to be negatively significant. In case of women sampled respondents caste, education and farm power were significantly but negatively correlated. It may be due to the reason that women from lower caste, less education and owning less farm power used to undertake more workload of animal husbandry. Same conclusion were arrived at by Jain (1991).

**Table 5.26** Relationship between socio-personal and economic variables and involvement of men and women in animal husbandry operations

Independent variables	Women 'r' value	Men 'r' value	Combined 'r' value
Age	-0.113	0.053	0.069
Caste	-0.285*	-0.036	-0.291*
Education	-0.276*	-0.137	-0.268*
Family size	0.028	0.035	0.032
Family type	0.114	0.018	0.084
Type of house	0.113	-0.112	0.112
Farm power	-0.275*	-0.281*	-0.256*
Social participation	0.042	0.051	0.042

\* P < 0.05

# RELATIONSHIP BETWEEN SOCIO-ECONOMIC VARIABLES WITH DRUDGERY OF MEN AND WOMEN IN ANIMAL HUSBANDRY PRACTICES

The data have been incorporated in Table 5.27 for drudgery undertaken by men and women in animal husbandry practices under the study with socio-economic variables. In case of pooled sampled respondents only age and education were found to be significant but negatively correlated. It might be due to the fact that respondents from old age-group, highly educated used to take less drudgery load in animal husbandry practices than those who are young, less educated. In case of men sampled data, none of the variables was found to be significant. In case of women sampled data only age were found to be significant, but negatively correlated with drudgery undertaken by women respondents in animal husbandry practices. It might be due to the reason that women respondents from old age-group used to undertake lower drudgery workload as they employ hired or permanent labour for animal husbandry operations due to good economic condition. Similar findings were reported by Jain (1991).

**Table 5.27** Relationship between socio-personal and economic variables and drudgery undertaken by men and women in animal husbandry practices

Independent variables	Women 'r' value	Men 'r' value	Combined 'r' value
Age	-0.245*	0.062	-0.263*
Caste	-0.112	-0.019	-0.033
Education	-0.014	-0.116	-0.112
Family size	-0.021	0.001	0.014
Family type	0.011	0.101	0.116
Type of house	0.115	-0.113	0.112
Farm power	-0.127	-0.019	0.114
Social participation	0.054	0.022	0.046

\*  $P < 0.05$



## DECISION-MAKING PATTERN IN THE FAMILIES

The major decision-making areas identified in the study were related to home management, child rearing, money management, socio-religious rituals, farm activities and dairying. The data are presented in Table 5.28. There are two areas, viz. agriculture and animal husbandry in which husbands are major decision-makers. There is only one area i.e. socio-religious ritual related decision, in which wives are major decision-makers in case of large landholding category, in other landholding categories this decision was mostly taken jointly by husband and wife. In case of child related decision majority of the decisions were taken jointly by husband and wife. The cultural value that farm work is the domain of men and household the domain of women, prevail in the society without any regard paid to the contribution made by women in farming. Even in case of dairying related decision in which maximum percentage of workload is shouldered by women, majority of decisions are taken by husbands independently. Similar findings were supported by Khandeker and Kunru (1997). The overall picture emerging from the decisions taken in farm family in all the six areas of decision-making is that men heavily predominate the decision-making processes and women are denied to their due share. The cultural values, which have provided dominating position to men in the families, have obviously influenced the decision-making process as discussed above. Yet, interestingly, there is no sign of dissent from women folk against the domination of men. This is well accepted and there is complete harmony on this in the families.

**Table 5.28** Decision-making pattern in farm families

(N=100)

Decision	Landless			Small and Marginal			Medium			Large		
	Husband	Wife	Joint	Husband	Wife	Joint	Husband	Wife	Joint	Husband	Wife	Joint
Home management related decision	26 (31.3)	5 (6.0)	52 (62.7)	68 (44.1)	14 (9.1)	72 (46.8)	-	2 (2.7)	72 (97.3)	-	-	65 (100.0)
Child related decision	52 (34.9)	5 (3.4)	92 (61.7)	82 (32.4)	2 (0.8)	169 (66.8)	-	-	136 (100.0)	2 (1.9)	11 (10.5)	92 (87.6)
Money related decision	82 (45.3)	2 (1.1)	97 (53.6)	74 (21.5)	66 (19.2)	204 (59.3)	115 (45.8)	-	136 (54.2)	7 (4.1)	2 (1.2)	162 (94.7)
Socio-religious rituals decisions	40 (30.8)	6 (4.6)	84 (64.6)	38 (15.1)	42 (16.7)	171 (68.2)	-	8 (6.7)	112 (93.3)	-	61 (59.2)	42 (40.8)
Farm related decision	73 (53.3)	2 (1.5)	62 (45.2)	102 (52.8)	9 (4.7)	82 (42.5)	119 (100.0)	-	-	112 (100.0)	-	-
Animal related decision	42 (84.0)	4 (8.0)	4 (8.0)	71 (78.0)	12 (13.2)	8 (8.8)	32 (69.6)	7 (15.2)	7 (15.2)	29 (70.7)	6 (14.6)	6 (14.6)

# Summary and Conclusion Suggestions And



## Policy implications



1. To study the nature and extent of involvement of rural women and their contribution in agriculture, animal husbandry and household activities in terms of operations and time spent.
2. To estimate the drudgery profile of rural women in agriculture and animal husbandry practices.
3. To isolate the correlates of empowerment and mobility in agricultural and animal husbandry practices.
4. To suggest the suitable policy measures for improving the status of women involved in agriculture and animal husbandry sector.

## Chapter-VI

### SUMMARY AND CONCLUSION

---

Women constitute about half of the world's population account for 60 per cent of the working hours. Although women represent bulk of the labour force especially in the developing economics of Asia, America and Africa, yet they have not been actively involved in the main stream of development and there is hardly any appreciation and recognition of their extensive contribution. By and large, they have remained as "invisible hands". Therefore, life of women is full of drudgery at every moment. Therefore, the present study have been undertaken with the following specific objectives.

1. To study the socio-economic characteristics of rural women of the study area.
2. To study the nature and extent of involvement of rural women and men in agriculture, animal husbandry and household activities in terms of operations and time spent.
3. To estimate the drudgery profile to men and women in agriculture and animal husbandry practices.
4. To isolate the correlates of involvement and drudgery in agricultural and animal husbandry practices.
5. To suggest the suitable policy measures for improving the status of women involved in agriculture and animal husbandry sector.



## **Research Methodology**

The study was conducted in U.P. State. U.P. state has been divided in four zones, Western, Central, Eastern and Bundelkhand. Kanpur district from central zone was purposely selected for the present study. Two blocks from Kanpur district, i.e. Sarsaul, Akbarpur was selected randomly. Out of two blocks, ten villages was selected randomly, For the collection of data 100 families from the selected village in proportion to the number of families in each landholding categories i.e., landless, small and marginal, medium and large were selected for the present study. The data were collected with the help of structural interview schedule. Ten most important operations each for agriculture and animal husbandry were selected to prepare a drudgery index. A semi-projective type instrument was developed to collect respondent's perception of drudgery involved in ten selected operation each for agriculture and animal husbandry.

## **Socio-economic profile of respondents**

Maximum 40.5 per cent of respondents were belonged to 30 – 40 years age group. 31.0 per cent respondents were having no education, 56.0 per cent respondents were possessed joint family system, 74.0 per cent respondents were up to 5 members, 52.5 per cent respondents were having cultivation as a main occupation, 48.0 per cent respondents were belonged to OBC and 53.0 per cent respondents were having mixed house.

## **Involvement of men and women in agriculture, animal husbandry and household activities**

The operations i.e. pesticide dusting, spade work during field irrigation, ploughing, sowing, manure and fertilizer application and

marketing of grains were exclusively performed by men. Transplanting and storage of grains were found to be exclusive domain of women. The other farm operations like weeding, harvesting, carrying load on head and threshing were performed jointly but predominantly by women. Women of landless category performed more work in crop cultivation than the women of small and marginal, medium and large land holding categories. This may be due to the fact that the respondents of landless category were having no land in their names and work as agricultural labourers on others farm. They are left with no alternative for their livelihood therefore perform more work on others fields as agricultural labour. Animal husbandry is predominantly a female affair in all the land holding categories. The household activities are exclusively done by women irrespective of their landholding categories.

#### **Drudgery undertaken by men and women in farm operations**

The various activities involved in cultivation of wheat and paddy involved varying magnitude of drudgery in carrying out agronomic operations of paddy and wheat cultivation, shouldered by women was found to be significantly higher than that shouldered by men. This indicates direct proportion of the time spent in performing various tasks by men as well as women. The amount of drudgery per man day of work shouldered by women was found to be significantly higher in both wheat as well as paddy cultivation. This is due to the reason that women devote more hours to work than men in cultivation of both wheat and paddy.

#### **Drudgery undertaken by men and women in animal husbandry**

There are two operations i.e. ghee making and preparation of cow dung cakes which were performed exclusively by women. The other operations

namely cleaning of cattleshed, preparation of feed for animals, milking and bringing fodder from field are predominantly performed by women. On an average, a women devotes more time to animal husbandry operations than men. There is significant difference in the total drudgery and per-man-day drudgery taken up by family men and women in animal husbandry operations.

**Relationship between socio-economic personal variables with involvement of men and women for cultivation of different crops**

In pooled sample, only education was significantly but negatively correlated with workload of respondents in paddy cultivation. None of the variable yielded any significant correlation in case of men, women and pooled sample with workload of respondents in wheat cultivation. In case of sampled women, men and pooled sample, none of the variables was found to be significant with drudgery undertaken by them in cultivation of wheat. In case of women respondents, none of the variables was found to be significant with drudgery undertaken in paddy cultivation.

**Relationship between socio-personal and economic variables with involvement of men and women in animal husbandry practices**

In pooled sample, all the variables found to be non-significant with involvement in animal husbandry practices except education and farm power were found to be negatively but significantly correlated.

**Relationship between socio-personal and economic variables with drudgery of men and women in animal husbandry practices**

In pooled sample, only age, education were found to be significant by negatively correlated with drudgery undertaken by men and women in animal husbandry operations.

## **Decision making pattern in farm families**

There are two areas i.e. agriculture and animal husbandry in which husbands are major decision-makers in all landholding categories. In case of socio-religious ritual related decision, in which wives are major decision-makers in case of large landholding category whereas, in other landholding categories, this decision was mostly taken jointly by husband and wife. The other areas viz., home management, child related and money related decisions most of the decisions were taken jointly by husband and wife.

## **Conclusion**

The overall involvement of women in agricultural operations and animal husbandry operations, in terms of average man days, were higher than that of men in all landholding categories. The total drudgery and per man day drudgery taken up by women was more than men in wheat and paddy cultivation as well as in animal husbandry operations. Thus, it may be inferred that more drudgery prone operations are performed by women.

Profile of the recipients indicates that socio-personal and economic variables like age, caste, education, farm power, milch animals, type of family show significant relationship with involvement pattern and total drudgery of respondents.

## **Suggestions and policy implications**

Some of the findings reported in this dissertation suggest several forereaching implications for planners, policy makers, administrators, extension workers and sociologist. The results, emanating from the study, produce well documented evidence that farm women have a close association with livestock and farming in the state. These results tend to suggest about need of more active role of the women for this segment of the rural society so as to achieve rural




development through the combined development of women and livestock. In the light of these results the following suggestions are made to exploit the women-livestock linkage fully :

1. Channels of information, credit, inputs and access to markets have to be aimed at women as they played a very important role in livestock keeping and decisions making related to livestock productions.
2. Extension assistance regarding livestock rearing have to be directed towards women to enhance their use as productive use of labour. The gender compositions of extension officers make it difficult for women farmers to obtain extension advice. Hence appropriate female frontline extension staff have to be employed to interact with the female farmers.
3. Bringing the available services closer to women for rearing the animals physically.
4. Suitable training programmes for the skill development of rural farm women on animal keeping may be organized so that their earning potential may be increased with the improved efficiency of the farm women. Their participation in such programmes is likely to bring forward the real and practical problems that need immediate attention of the policy makers.
5. Promoting intensive livestock rearing in rural areas may encourage female to participate more in livestock keeping as this practice did not require farm women to take animals for grazing far away from their homes.
6. The invisible partners should be encouraged to get the financial support from outside even from urban area.

7. Several livestock development programmes to help dairy farmers to adopt the A.H. practices are in operation throughout the country. Still there exists a wide gap between the technology available at the research stations and its adoption particularly in animal rearing by the women at grass root level. There is a greater need to bridge the gap between the technology producers and the users. The improved technologies, if properly used, can reduce the drudgery of farm women and increase the work efficiency.
8. There is a need to update knowledge of the dairy women in areas of breeding practices, feeding practices, disease control and general management aspects, respectively.
9. For increasing the potential for milk yield and for improving the income levels of dairy members, should be encouraged to improve the genetic quality of native species through crossbreeding of cows (Jersey) and upgrading of local buffaloes (Murrah). For crossbreeding and upgrading local cattle, facilities should be provided for artificial insemination as well as arrangement should be made for breeding bulls.
10. Facilitate state level workshop, bringing together policy makers, planners, financial institutions, voluntary organizations, dairy and cooperative sectors etc. to discuss issues related to the gender in equality and women development and also help in changing appropriately the policies
11. Farm women should be involved in the promotion of loan schemes and revolving funds to improve income level and to create assets.

12. All the agricultural and animal husbandry developmental programmes are targeted towards men only, such as biggest programmes of T and V in which men are the contact farmers. There is a need to modify the programme to include women, as contact farm women and also to integrate agricultural and animal husbandry developmental programmes so that they may be given due recognition.
-



# Bibliography

## BIBLIOGRAPHY

---

- Agarwal, Hema (1987). A study on contribution of farm-women in animal husbandry enterprise. An unpublished M.Sc. thesis submitted to IVRI, Izatnagar.
- Alessandro pio (2002). "Regional and Sustainable Development Department and Nekong Department". [www.riap.usyd.edu.94/research/publications/documents/women in Vietnam. Pdf.](http://www.riap.usyd.edu.94/research/publications/documents/women%20in%20Vietnam.Pdf)
- Anandalakshmy, S. and Sawhney, H.K. (1988). Women's contribution to the productive processes in agriculture and the impact of modernization. Paper presented at the International Conference on Appropriate Agricultural Technologies for Farm Women, held at New Delhi from Nov. 30 – Dec. 6.
- Anonymous (1987). Home and farm resource management in rural areas. Report All India Coordinated Research Project in Home Science, Department of Family Resource Management, Haryana Agricultural University, Hisar.
- Awasthi, H.K.; Singh, P.R.; Khan, M.A.; Sharma, P.N. (2002). Knowledge and attitude of dairy farmers towards improved dairy practices. *Indian J. Ext. Ed.*, XXXVIII(1&2) : 104.
- Badiger Chhaya *et al.* (2004). Drudgery of farm women in agriculture and animal husbandry operations. Proceeding 1<sup>st</sup> National Ext. Edu. Congress, Sept-03, *Ind. Res. J. of Ext. Edu.*, 4(1&2) : 202.
- BAIF Development Research Foundation (Jan. 2003) C:\My documents\BAIF Development Research Foundation. htm.
- BAIF Development Research Foundation (Jan. 2003). [http://www.baif.com/ livestock % 20 Development. htm.](http://www.baif.com/livestock%20Development.htm)
- Bala, B. Moorti and Sharma, R.K. (1993). Participation of rural women in decision making. *Indian Journal of Extension Education*, 24(3-4) : 40-46.

- Bhatti, J.P. and Singh, D.V. (1985). Women in hill agriculture : A case study of Himachal Pradesh. *Indian Journal of Agricultural Economics*, **XI**(2) : 225.
- Bhinder, Nita (1988). A study of opinion leadership and pattern of communication among farm women. An unpublished M.Sc. thesis submitted to IVRI, Izatnagar.
- Borah, R. (1998). Perceived drudgery and factors influencing time spent in agricultural operations by farm women in Assam. *Rural India*, Nov. 1998 : 214-221.
- Census of India (1991).
- Charu, (1992). Inter-gender drudgery in paddy cultivation. M.Sc. thesis, Chaudhary Charan Singh Haryana Agricultural University, Hisar.
- Chauhan, M. (1999). Workload and health problems in some occupational activities. Paper presented in advanced training in ergonomics at SNDT Women's University, Mumbai, 22-27 Feb. 1999.
- Country programme-China Agenda item 8, (2001-2005). [www.wfp.org/operations/current\\_operations/project\\_docs/100550.pdf](http://www.wfp.org/operations/current_operations/project_docs/100550.pdf).
- Dahiya, A. and Gupta, M. (1993). Role expectation of working couples regarding household work. *Maharashtra Journal of Extension Education*, **20** : 205-208.
- Dahiya, A. and Gupta, M. (1993). Role expectation of working couples regarding household work. *Maharashtra Journal of Extension Education*, Vol. XII pp 205-208.
- Dhongada, M.P.; Patil, S.D. and Patil, S.J. (1985). Participation of women labour in Maharashtra. *Indian Journal of Agricultural Economics*, **40**(3) : 265-266.



- Dr. Champak P. Pokharel (2005). Asia Development Bank, Nepal  
[www.nrb.org.np/red/publication/ADB%20 & % 20Nepal\\_ADB%20 & % 20 Nepal. Pdf.](http://www.nrb.org.np/red/publication/ADB%20%20Nepal_ADB%20%20Nepal.Pdf)
- Dubey, V.K. (1988). All work and no plan. *Indian Farming*, 38(8) : 7.
- Emerging Gender Strategies for alternative Development (2005). [www.unodc.Un.or.th/ad/Publication/Emerging % 20 Gender – content. Pdf.](http://www.unodc.Un.or.th/ad/Publication/Emerging%20Gender-content.Pdf)
- Executive Board, First Regular Session, Rome (2001). [www.wfp.org/operations/current\\_operations/project\\_docs/100550. pdf.](http://www.wfp.org/operations/current_operations/project_docs/100550.pdf)
- Executive Summary, (2002) on Tenth Plan : Animal Husbandry and Dairying. A Report of Tenth Five Year Plan (2002-07). Planning Commission, Govt. of India, January.
- Ghosh, Souvik and Chand Ram (2001). Constraints in Adoption of recommended technologies for improved dairy farming. *Indian J. Ext. Ed.*, XXXVII(1&2).
- Godara, R. (1997). Knowledge level and technological gap in cotton cultivation. M.Sc. thesis, Chaudhary Charan Singh Haryana Agricultural University, Hisar.
- Guleria, A.S. and Agnihotri, B. (1985). Contribution of female workers in the farm sector. *Indian Journal of Agricultural Economics*, 40 : 271.
- Initial Report on the Convention on the Elimination of all forms of Discriminaiton Against women (CEDAW) by the State of Eritrea (2004). [www.womenwarpeace.org/critrca/docs/cedaw. Pdf.](http://www.womenwarpeace.org/critrca/docs/cedaw.Pdf)
- Intelecon (Jan. 2003). “Final Report to the Uganda Communications Commission Policies and Strategies for Rural Communications in Uganda”. Web. [Idrc.ca/uploads/user5/1055450770IDRC\\_Uganda-Report\\_Jan\\_2003\\_FINAL.doc](http://Idrc.ca/uploads/user5/1055450770IDRC_Uganda-Report_Jan_2003_FINAL.doc).-24 Apr. 2005.

- Jain, D. (1980). Milk producers of Kaira Women's Quest for Power. Vikas Publishing House, New Delhi.
- Jain, V. and Verma, S.K. (1992). Nature and extent of involvement of men and women in animal husbandry operations. *Indian Dairyman*, 44(7) : 332-337.
- Jain, Vinita (1991). Inter-gender drudgery in animal husbandry operations among rural families. M.Sc. Thesis, Chaudhary Charan Singh Haryana Agricultural University, Hisar.
- Jesmani, A. (1990). Limits of empowerment women in rural health care, *Economic and Political Weekly*, 25(5-12) : 1098-1103.
- Jha, B.K. and Shiyani, R.L. (1995). Differential levels of adoption of dairy innovations. *Indian J. Ext. Ed.*, XXXI(1&4).
- Joshi, Nita (1990). Communicator credibility as perceived by farm women. An unpublished M.Sc. thesis submitted to IVRI, Izatnagar.
- Kalantri, L.B., Sinha, R.R.a and Kubde, V.R. (1991). *Maharashtra Journal of Extension Education*, 10(2) : 158-161.
- Kathy Thompson (2001-2005). "Review of Gender Issues in the USAID". [www.usaid.gov/our-work/cross-cutting-programs/wid/pubs/Kenya-gi-0900.pdf](http://www.usaid.gov/our-work/cross-cutting-programs/wid/pubs/Kenya-gi-0900.pdf).
- Kaur, R. and Mahajan, N. (1993). Performance of agricultural related roles by farm-women. *Agricultural Extension Review*, 5(1) : 19-23.
- Khandekar, N. and Kunzru, O.N. (1997). Involvement of tribal women in decision-making in Madhya Pradesh. *Maharashtra Journal of Education*, 8(3) : 1730-1734.
- Kharole, M. (1990). Time utilization pattern of rural women in dairy farming. M.Sc. Thesis, Haryana Agricultural University, Hisar.



- Kumari, Suman (2005). "Nepal : Poverty, Vulnerability and Social protection"  
[www.nrb.org.np/red/publication/ADB%20 & % 20 Nepal\\_ADB % 20 & % 20 Nepal. Pdf.](http://www.nrb.org.np/red/publication/ADB%20%20Nepal_ADB%20%20Nepal.Pdf)
- Kunwar, Neelma (2004). Role and status of women in agricultural development in Western Uttar Pradesh. D.Sc. thesis, submitted to B.R. Ambedkar University, Agra.
- Latha, N. and Brindher, N. (1994). Participation of women in seed industry. *Indian Farmer's Times*, 12(5) : 17-22.
- Manekar, K. (1990). Women and employment. *Employment News*, April 7-13, p. 6.
- Manjal, S. (1984). An exploratory study of rural women's allocation, decision and activity pattern in Karnal district. M.Sc. thesis Haryana Agricultural University, Hisar.
- Marothia, D.K. and Shjarma, S.K. (1984). Female participation in rice farming system of Chhattisgarh region. *Indian Journal of Agricultural Economics*, 40.
- Mckenzie, Derek (2000). Working smarter not harder ? A/DARD Article-working smarter not harder. htm. July 07, 2000 16/A/00.
- Nagpal, M. (1989). Technology for women in Kulu district. *Social Welfare*, 35(11) : 20-23.
- Narendra Reddy, Moorthy P.V.R., Rao, P.R.S., Sarjan, K. (2003). Constraints in dairy farming in Prakasam district of Andhra Pradesh. *Indian J. Ext. Ed.*, XXXIX(1&2).
- Nataraju, M.S. and Lovely, P.G. (1989). Role of farm women in farm and home activities. *Interaction*, 50 : 64-67.
- Nhantumbo, I., Norfolk, S. and Feereira, J. (2003). Community based natural resources management in Mozambique : a theoretical or practical strategy

for local sustainable development. The Case study of Derre Forest Reserve'.

Patel, M.R.; Trivedi, J.C.; Desai, C.P. and Patel, A.A. (1995). Role of rural women in agriculture. *Gujarat Agricultural University Research Journal*, 21(1) : 105-113.

Patel, R.K. and Mehta, R.K. (1988). Appropriate livestock production technologies for farm women. Abstracts. International Conference on appropriate agricultural technology for farm women, 69, held at New Delhi, Nov. 30-Dec. 7.

Pati, Jagannath and Vijay Kumar, K.K. (1997). Women carry burden of ecological destruction. *Social Welfare*, pp. 24-28.

Proceedings : Spraknet Scanario E-Conference. (2004). db. Sparknet.info/docs/sparknetscenarios proceedings, pdf.

Puri, S. (1974a). Role of women in animal husbandry. *Indian Dairyman*, 22(23) : 9.

Puri, S. (1974b). Rural families and decision-making pattern. *Ind. J. of Ext. Edu.*, VII (March-June) : 66.

Rajamal, P.D.; Pandey, H. and Muthian, (1991). Socio-economic study of farm women in rainfed agriculture and the role of Krishi Vigyan Kendra. International Conference in Extension Strategy for minimizing risk in rainfed agriculture, New Delhi.

Rangnekar, S. *et al.* (1991). A study on women in dairy production. Paper presented at the International Workshop on feeding of Ruminants on fibrous crop residues held at Karnal, India, Feb. 1991. <http://www.fao.org/ag/AGa/AGAP/WAR/warall/t3080b/t308bom.htm#>

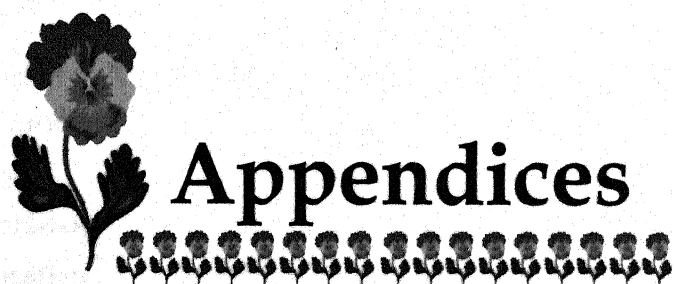
Shilaja, S. and

Maharaj

- Rathberger, E.M. and Adera, E.O. (Eds.) April-2005. Gender and the Information Revolution in Africa. IDRC. Canada. web. Idrc. Ca/uploads/users/10554507449IDRC\_Uganda\_Report\_Jan-2003-FINALdoc.-24 Apr. 2005.
- Ratnam and Prasad (1985). Factors responsible for the change in milk procurement, A case study of Vishakhapatanam Milk Shed. *Indian Coop. Rev.*, XXII(4).
- Regional Seminar on alternative Development : Information Networking and Sharing Good practices on Gender and Development (2005). [www.unodc.un.or.th/ad/publication/Emerginig % 20 Gender content. Pdf](http://www.unodc.un.or.th/ad/publication/Emerginig%20Gender%20content.Pdf).
- Sangwan, V.; Grover, I. and Munjal, S. (1986). Participation of rural women of Haryana in home farm and dairy sectors. Paper presented in the seminar on 'Role of development programmes on socio-economic status of women' held at Haryana Agricultural University, Hisar from March 21-22.
- Sardana, P.K.; Gandhi, S.; Hasija, R.C. and Chamola, S.D. (1988). Role of women in agri.-farm women and dairy cattle supplement one another. *Journal of Ext. systems*, 4(1) : 67-69.
- Saroja Bala (1991). Participatory role and constraints of women in wheat cultivation. M.Sc. Thesis, Chaudhary Charan Singh Haryana Agricultural University, Hisar.
- Sharma, R.K. (1980). A study of socio-psychological and Infrastructural constraints in the efficient execution of ICDP, Ph.D. thesis (unpub.), NDRI, Karnal.
- Shatrugna, V. (1990). Experiencing drudgery. *Economic and Political Weekly*, 25(16) : 292-325.
- Shilaja, S. and Jayaraman, K.N. (1993). Role of farm-women in Kerala state. *Maharashtra Journal of Extension Education*, 12 : 195-198.

- Singh, Mithlesh *et al.* (2004). Factors associated with adoption of dairy management practices by DCS members. Proceeding 1<sup>st</sup> National Ext. Edu. Congress Sept-03. *Ind. Res. J. of Ext. Edu.*, 4(1&2) : 259.
- Sinn, R., Ketzs, J. and Chen, T. (1999). The role of women in the sheep and goat sector. *Small Ruminants Research*, 34 : 259-269.
- Sisodia, J.S. (1985). Role of farm women in agriculture : A study of Chambal Command Area of Madhya Pradesh. *Indian Journal of Agricultural Economics*, 11(2) : 225.
- Stephanie Fahey Shrieen Lateef (2002). Women in Vietnam. [www.riap.usyd.edu.94/research/publications/documents/women in Vietnam. Pdf.](http://www.riap.usyd.edu.94/research/publications/documents/women%20in%20Vietnam.Pdf)
- Sultana, H.S. and Pathak, M. (1991). Role of women in paddy cultivation in Assam. *Indian Farmers Times*, 9(4) : 19-20.
- Sustainable Livelihood in Southern Africa Research Paper 10, Institute of Development Studies, Brighton (2003). [www.ids.ac.uk/ids/env/pdfs/wrp10. pdf.](http://www.ids.ac.uk/ids/env/pdfs/wrp10.pdf)
- Swaminathan, M. (1997). Villages in Chamoli district. *Social Welfare*, 24-28.
- Swaminathan, M.S. (1993). Farm policy : time to reconsider. *The Survey of the Environment* : 28-29.
- Sylvie Morel-Seytoui, "Kenya Integrated Strategic Plan (ISP) (2001-2005). [www.usaid.gov/our-work/cross-cutting-programs/wid/pubs/Kenya-gi-0900.pdf.](http://www.usaid.gov/our-work/cross-cutting-programs/wid/pubs/Kenya-gi-0900.pdf)
- Tashi Tscten Lepcha, (1987). A study of farm women's contribution to agricultural production in eastern district of Sikkim state. M.Sc. thesis Gujarat Agricultural University, Anand.
- Thakar, R.F. and Patel, K.F. (1998). Knowledge of farm women about improved agricultural and animal husbandry practices. *Rural India*, March (1998) : 73-75.

- Thakur, D.S. (1988). Giver of food, forgivers of Society. *Indian Farming*, 38(8) : 5.
- Tripathi, Hema (1991). Productivity of milch animals and employment generation for rural women. An unpublished Ph.D. thesis submitted to IVRI, Izatnagar.
- Upadhyay, R. (1985). Participation of non-school going and school going rural girls in home making, care of cattle and family. M.Sc. thesis, Sukhadia University, Udaipur.
- Varma, S.K. (1989). Farm women in the changing agro-economic scenario. Ph.D. Thesis, Indian Agricultural Research Institute, New Delhi.
- Verma, T., Dahiya, R. and Grover, I. (1991). Post harvest technological advancement and farm-women. *Maharashtra Journal of Extension Education*, 10(2) : 196-198.
- Widge, M.K. (1995). Women in Agriculture. *Yojana*, pp. 21-26.
- Wijaya, H.R. (1993). Developing agriculture with a women's perspective : A challenge. Invited paper, 37th Annual Conference, Australian Agricultural Economic Society, University of Sydney, Feb. 9-11.
- Yadav, B. (1990). Training strategy for human resource development of rural women. Ph.D. Thesis, Haryana Agricultural University, Hisar.
-



# Appendices



## APPENDICES

### INTERVIEW SCHEDULE

#### INTER-GENDER DRUDGERY IN AGRICULTURAL AND LIVESTOCK OPERATIONS OF KANPUR DISTRICT

Name of the respondent : .....  
Age : .....  
Head of the family : .....  
Village : .....  
Block : .....

1. Caste

Upper caste : .....  
Backward caste : .....  
Scheduled caste : .....

2. Occupation

Agricultural labour : .....  
Caste occupation : .....  
Independent profession/business : .....  
Cultivation : .....  
Service : .....

3. Education

Illiterate : .....  
Primary : .....  
Middle : .....  
High School : .....  
Technical/vocational/education: .....  
Graduate : .....  
Post-graduate and above : .....

4. Social participation

No participation : .....  
Member of one organization : .....  
Member of more than one organization : .....  
Office holder : .....  
Wider public : .....



5. Family size
  - Up to 5 members : .....
  - Above 5 members : .....
6. Type of family
  - Nuclear : .....
  - Joint : .....
7. Land holding
  - Landless : .....
  - Up to 1 ha : .....
  - 1 ha to 2 ha : .....
  - 2 ha and above : .....
8. House
  - Kuchcha : .....
  - Mixed : .....
  - Pucca : .....
9. Farm power
  - 1 – 2 drought animals : .....
  - 3 – 4 drought animals : .....
  - 5 and above : .....
  - Tractor : .....
10. Improved Agricultural implements
  - Up to 4 : .....
  - 4 and above : .....
  - Tractor driven implements : .....
11. Milch animals
  - 1 – 2 milch animals : .....
  - 3 – 4 milch animals : .....
  - 5 – 8 milch animals : .....
  - 9 and above : .....
12. Material possession
  - (a) Household appliances
    - Stove : .....
    - Coal iron : .....

Sewing machine	:	.....
Electric iron	:	.....
Cycle	:	.....
Radio	:	.....

») Prestige items

Electric iron	:	.....
Electric heater	:	.....
Mixer Blender/grinder	:	.....
Food processor	:	.....
Juicer	:	.....
Toaster	:	.....
Oven	:	.....
Immersion rod	:	.....
Pressure cooker	:	.....
Improved storage bins	:	.....
Gobar gas plant	:	.....
Gas chulah	:	.....
Solar cooker	:	.....
Sofa set	:	.....
Dinning set	:	.....
Double bed	:	.....
Knitting machine	:	.....
Tape recorder/record player:		.....
Twin player-cum-recorder :		.....
Scooter/Motor cycle	:	.....
Refrigerator	:	.....
Cooler	:	.....
Washing machine	:	.....
T.V.	:	.....
VCR	:	.....
Camera	:	.....
Geyser	:	.....
Car/Jeep/Matador	:	.....
Any other	:	.....

## (A) Improvement of men and women in crop production

Operation	Wheat (hrs/day)		Paddy (hrs/day)		Total involvement in a year (No. of days)
	Men	Women	Men	Women	
<b>1. <u>Pre-sowing</u></b>					
(i) Land preparation					
(ii) Irrigation for land preparation					
(iii) Puddling					
(iv) Land leveling					
(v) Repair channels/bund					
(vi) Preparation of FYM compost					
(vii) Seed treatment before sowing					
(viii) Nursery bed raising					
<b>2. <u>Sowing</u></b>					
(i) Sowing					
(ii) Transplanting/Seeding					
(iii) Thinning					
(iv) Gap filling					
(v) Spreading fertilizer					
<b>3. <u>Post-sowing</u></b>					
(i) Weeding					
(ii) Hoeing					
(iii) Fertilizer application					
(iv) Fungicides & pesticides application					
<b>4. <u>Harvesting</u></b>					
<b>5. <u>Post-harvest operation</u></b>					
(i) Preparation of threshing floor					
(ii) Threshing through machines					
(iii) Hand threshing					
(iv) Winnowing					
(v) Drying and cleaning of produce					
(vi) Seeds/grains care					
(vii) Carrying bundles of produce from threshing floor					

## B. Involvement of men and women in animal husbandry and dairying operations

Sl. No.	Operation	Hrs/day			Total time spent in a year (No. of days)
		Men	Women	Joint	
1.	Bringing fodder from field				
2.	Chaffing the fodder				
3.	Prepare feed for animals				
4.	Grazing animals				
5.	Health care of animal (Dehorning and deworming etc.)				
6.	Offering water to animals				
7.	Cleaning of animals				
8.	Cleaning of shed and preparing cow dung cakes				
9.	Milking				
10.	Selling of milk				
11.	Cleaning of utensils used for milking				
12.	Prepare milk products				
	(a) Ghee				
	(b) Paneer				
	(c) Any other				
13.	Another specify				

## C. Involvement of women in household activities

Sl. No.	Operation	Hrs/day	Frequency		Total time spent in a years (hrs)
			Daily	Number of days in a year	
1.	Pre-cooking activities				
2.	Cooking activities				
3.	Post cooking activities				
4.	Washing of cloths				
5.	Cleaning of house				
6.	Care of children				
7.	Leisure time activities (a) Knitting (b) Pickle making (c) Papad making (d) Stitching (e) Dari making				
8.	Any other				

## D. Decision-making in farm and homestead activities

Sl. No.	Activity	Decision maker		
		Husband	Wife	Joint
A.	<u>Farm</u>			
	(1) Pre-sowing			
	(2) Sowing			
	(3) Post-sowing			
	(4) Harvesting			
	(5) Post-harvest			
	(6) Carrying farm produce			
	(7) Marketing of produce			
	(8) Storage of grains			
B.	<u>Animal husbandry and dairying</u>			
	(1) Carrying fodder			
	(2) Chaffing/cutting fodder			
	(3) Food preparation			
	(4) Animal grazing			
	(5) Feeding animals			
	(6) Giving water to animals			
	(7) Milching			
	(8) Preparation of milk product			
	(9) Cleaning animal sheds			
	(10) Washing animals			
	(11) Making dung cakes			
	(12) Any other			
C.	<u>Household</u>			
	(1) Pre-cooking			
	(2) Cooking			
	(3) Fetching fuel wood			
	(4) Fetching water			
	(5) Cleaning utensils			
	(6) Cleaning households			
	(7) Washing clothes			
	(8) Grain processing			
	(9) Child rearing			
	(10) Child care			
	(11) Schooling of child			
	(12) Health care of other members of family			
	(13) Personal health care			
	(14) Budget preparation/money related matters			

E. Drudgery assignment of agricultural operations carried out by men and women

[illegible]

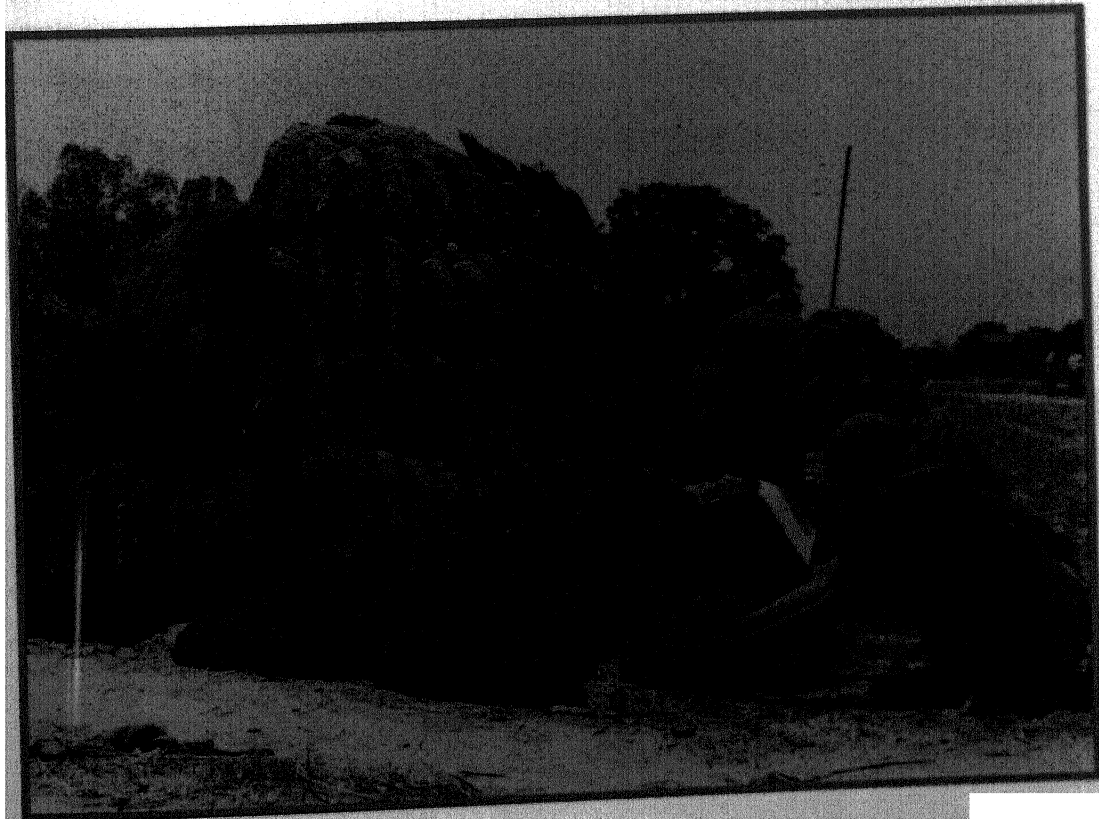


F. Drudgery assignment in animal husbandry operations carried out by men and women

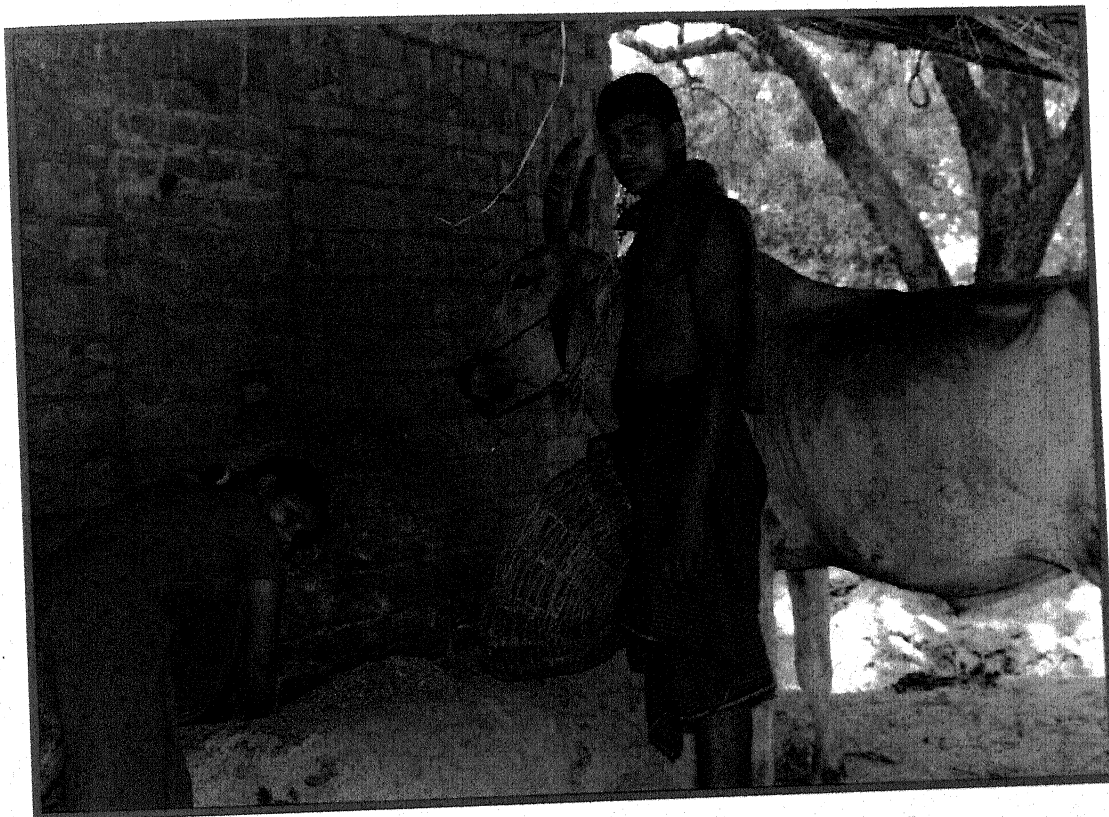
Sl. No.	Operations	Carrying fodder	Preparing feed	Offering water to animals	Protecting animals from Ticks and Lice	Chaffing the fodder	Cleaning of animals	Cleaning of cattle shed	Preparation of cow dung cake	Milking	Ghee making
1	2	3	4	5	6	7	8	9	10	11	12
1.	Carrying fodder										
2.	Preparing feed										
3.	Offering water to animals										
4.	Protecting animals from Ticks and Lice										
5.	Chaffing the fodder										
6.	Cleaning of animals										
7.	Cleaning of cattle shed										
8.	Preparation of cow dung cake										
9.	Milking										
10.	Ghee making										



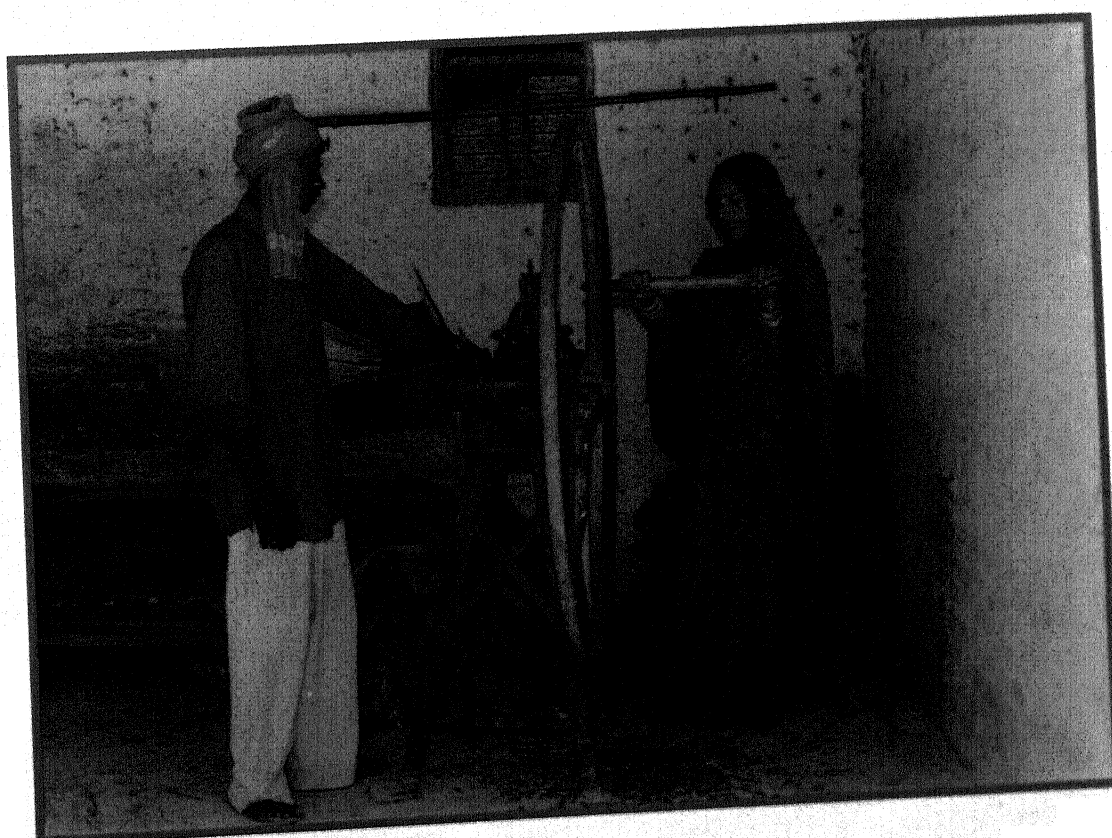
**Plate 1: Woman carrying load on head**



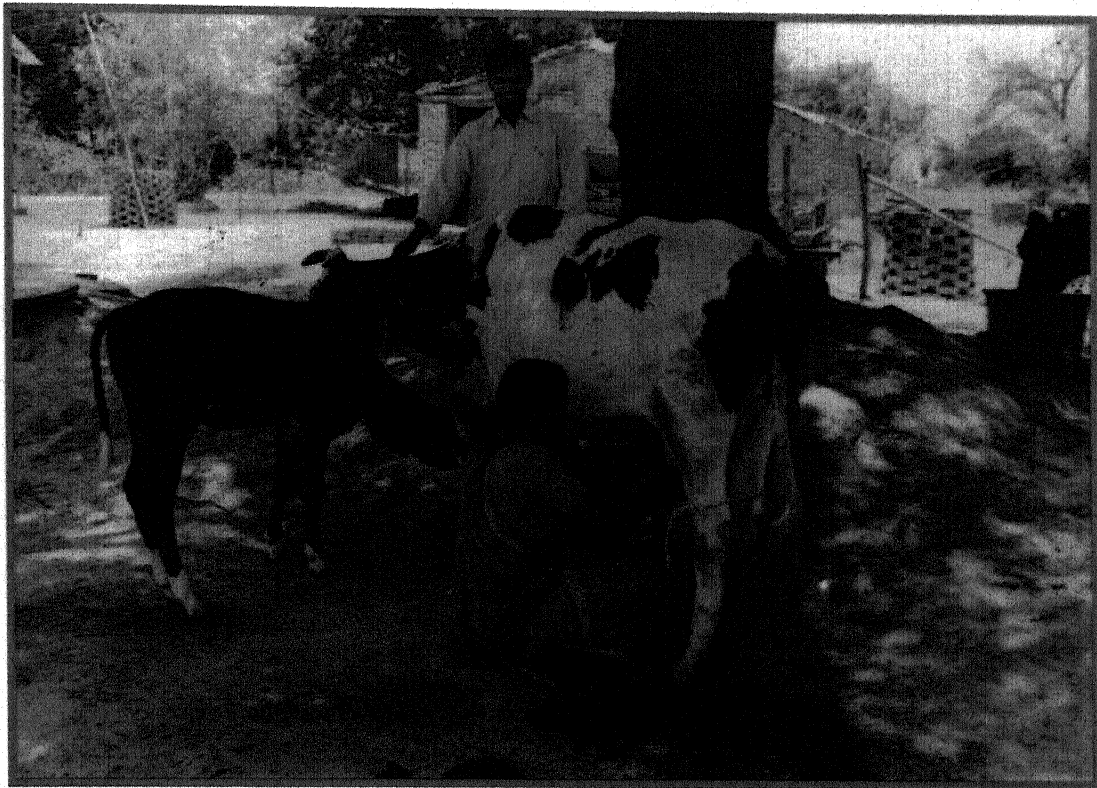
**Plate 2: Preparation of cow dung cakes**



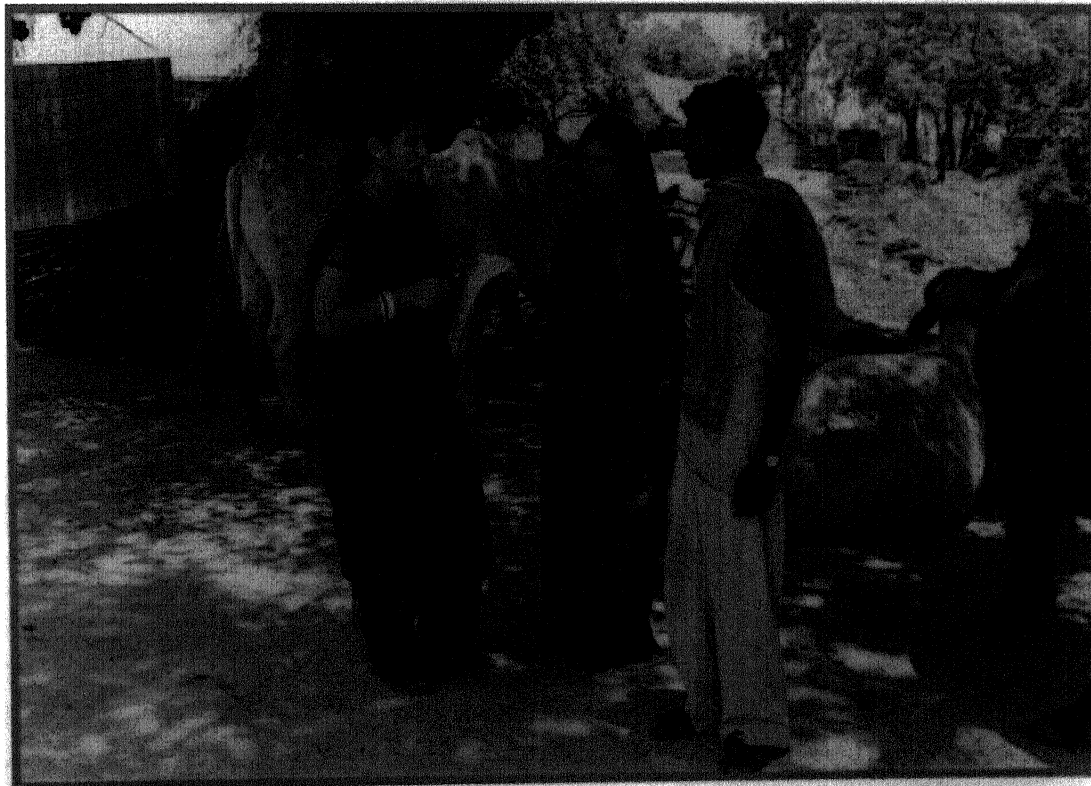
**Plate 3: Preparing feed for animals**



**Plate 4: Fodder cutting in chaff cutter**



**Plate 5: Women involved in milking**



**Plate 6: Interviewing with farm family**